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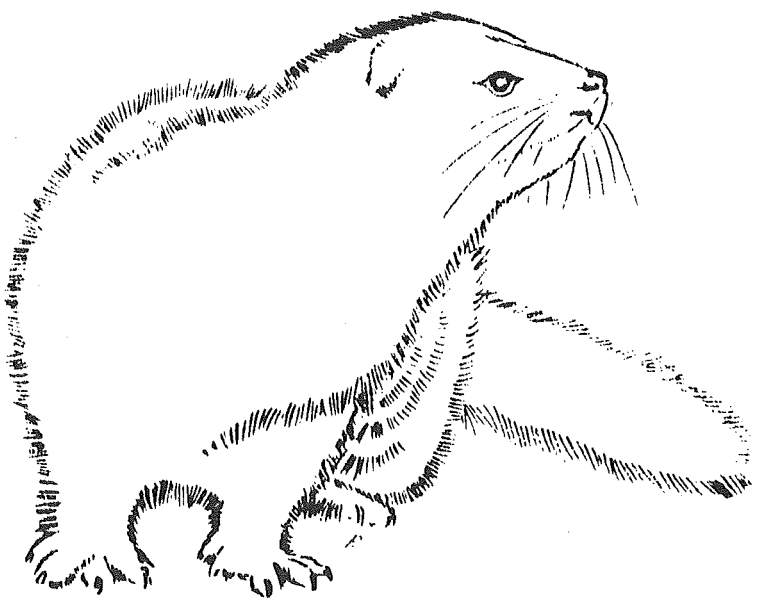

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Titles of other publications - not abstracted.

FUR ANIMAL BREEDING IN THE NETHERLANDS. E.J. Stigter, Directie Veehouderij en Zuivel, Ministerie van Landbouw en Visserij, Den Haag, Netherlands. (Bedrijfsontwikkeling, 13 (1982) 4, 367-368). Code 13-M-F.

MORPHOLOGY AND FUNCTION OF THE TIBIA OF FOX, SABLE AND MINK. N.A. Slesarenko, L. Yu. Druzhinina, USSR. (Sbornik Trudov Moskovskaya Veterinarnaya Akademiya, 121, 3-6, 1981). Code 2-M-F-0.

COMPARATIVE ANATOMY OF THE LIMB SKELETON OF SABLE AND MINK KEPT UNDER DIFFERENT CONDITIONS (WILD AND CAGED). N.A. Slesarenko, USSR. (Sbornik Trudov Moskovskaya Veterinarnaya Akademiya, 121, 6-8, 1981). Code 2-10-M-0.

THE RELATIONSHIPS BETWEEN BEECH (NOTHOFAGUS SP.) SEEDFALL AND POPULATIONS OF MICE (MUS MUSCULUS), AND THE DEMOGRAPHIC AND DIETARY RESPONSES OF STOATS (MUSTELA ERMINEA), IN THREE NEW ZEALAND FORESTS. C.M. King, Ecology Division, DSIR, Private Bag, Lower Hutt, New Zealand. (Journ. of Animal Ecology, 52, 141-166, 1983). Code 1-0.

4. GENETICS.

7. VETERINARY SCIENCE

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CHANGE IN THE MORPHOLOGICAL COMPOSITION OF BLOOD AND THE LEVEL OF SPECIFIC ANTIBODIES IN FOXES WITH ORAL ANTI-RABIES IMMUNIZATION (FUR FARMING). V.P. Davydenko, USSR. (Veterinarnaia Nauka-Proizvodstvu. (Minsk, "Uradzhai") 1980, V. 18, 36-42, ISSN 0321-0529). Code 9-3-F.

CRYPTOSPORIDIOSIS IN A RACCOON. Brent L. Carlson, Svend W. Nielsen, Northeastern Research Center for Wildlife Diseases, Dept. of Pathobiology, Univ. of Connecticut, Storrs, CT 06268. (JAVMA, Vol. 181, no. 11, 1405-1406, 1982). Code 9-O.

GENERALIZED AMYLOIDOSIS AND PERITONITIS IN A RACCOON. Gary A. Anderson, James S. Cullor, Dept. of Pathology, School of Vet. Med., University of California, Davis, CA 95616. (JAVMA, Vol. 181, no. 11, 1407, 1982). Code 9-O.

COMPARATIVE PHARMACOLOGICAL STUDY ON D.L. ADRENALINE-DIPIVALATE HYDROCHLORIDE AND L-ADRENALINE AFTER LOCAL AND ORAL APPLICATION (CAT, RAT, MOUSE, GUINEA PIG, RABBIT, CHINCHILLA). R. Eisenburger, H. Hampel, G. Hofrichter, R. Löser, c/0 Klinge Pharma GmbH & Co., Postfach 40 04 20, 8000 München 40. (Arzneimittelforschung (Germany, F.R.); Drug Research V. 31-1 (2), 325-334, 1981). Code 14-O.

OBSERVATIONS ON MINK COCCIDIA IN KAZAKHSTAN. K.K. Nukerbaeva, Inst. of Zoology Acad. Sci. Kazakh SSR, Alma-Ata 480032. (Vilnius, Litovskaya SSR, USSR; Inst. Zool. i Parazitologii, Akad. Nauk Current Topics in Protozoology. Proceedings of the 3rd All-Union congress of Protozoologists). Page 263, 1982). Code 9-M.

ISOLATION OF PATHOGENIC BACTERIAL CULTURES IN DEAD BLUE FOX KITS. E.T. Tsvetkova, USSR. (Nauchnye Trudy - Nauchno-Issledovatel'skij Inst. Pushnogo Zverovodstva i Krolikovodstva (USSR), V. 21, 58-61, 1980). Code 9-F.

I. DISINFECTANTS FOR PREMISES AND CAGES FOR FUR BEARING ANIMALS IN OUTBREAKS OF ANTHRAX. II. RAPID TEST FOR THE EFFICACY OF DISINFECTION AGAINST ANTHRAX, USING BACILLUS ANTHRACOIDES STRAIN 90 AS A TEST ORGANISM. Z. E. Vranchan, USSR. (Moscow, USSR; Vsesoyuznyi Nauchno-Issledovatel'skii Institut Veterinarnoi Sanitarii. Dezinfektsiya v Promyshlennom Zhivotnovodstve. Part of collective document 79-82, 87-90, 1980) Code 9-M-F-O.

N O T E S

SCIENTIFUR, VOL. 7, NO. 4, 1983.

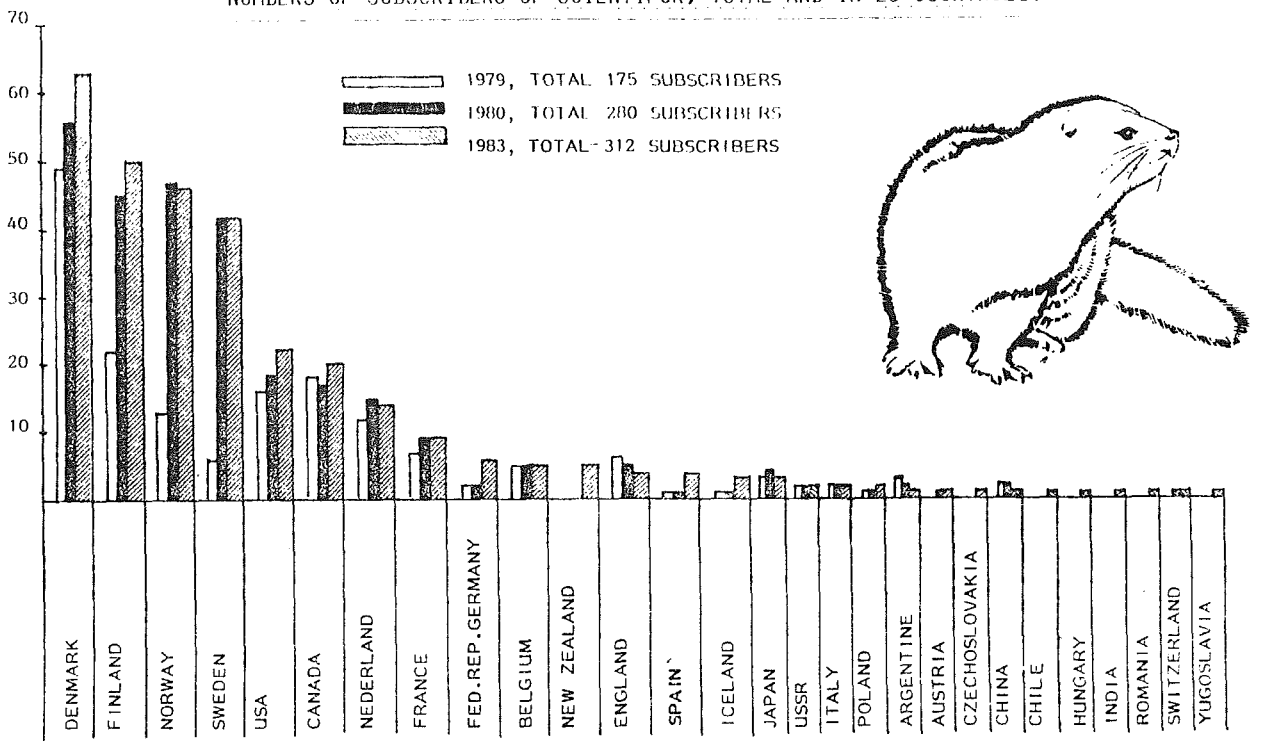
As a subscriber to SCIENTIFUR you should have received more than 300 titles of scientific reports conserning fur bearing animals during the year 1983. Of these titles the main part has been abstracts, but it is interesting to notice the increasing numbers of original reports.

About 80 percent of the abstracts presented is obtained by literature search in relevant databases. It seems so that too many scientists - also of these who know SCIENTIFUR - are not so collegial to SCIENTIFUR and us that they want to help us by sending reports following an abstract in English as soon as the report has been published. Of course the number of titles published in SCIENTIFUR does not indicate any crisis, but looking at the future it is not true that the enthusiasm in the editorial side of SCIENTIFUR can be kept to a certain level that no problems will come up.

THEREFORE, DEAR COLLEAGUES, LET IT BE ONE OF YOUR PROOFS FOR 1984 AND THE FOLLOWING YEARS - SEND REPORTS IN ORIGINAL LANGUAGE AND ABSTRACTS IN ENGLISH TO SCIENTIFUR THE DAY THEY HAVE BEEN PUBLISHED.

As you will see from the figure below the numbers of subscribers has increased very slowly since 1980 - we are still very close to the expected minimum - HELP US TO INCREASE THE NUMBERS OF SUBSCRIBERS.

NUMBERS OF SUBSCRIBERS OF SCIENTIFUR, TOTAL AND IN 28 COUNTRIES.



We have, thanks to the help many of you already have given, had a lot of enquiries from practical farmers around the world - but it is our experience that the main part of these potentially subscribers find SCIENTIFUR too scientific - which it has to be for the majority of farmers, who have their own "local" journal for information. The stable and naturally subscribers of SCIENTIFUR are SCIENTISTS, ADVISERS, LIBRARIES (both public, university and institutional libraries) and LEADING PEOPLE IN THE FUR ANIMAL PRODUCTION.

THEREFORE, HELP US TO GET SUCH CONTACTS!

One of the basic things in the economy of SCIENTIFUR is that we have got it printed in DANISH FUR SALES for the minimum calculated cost price. This price has only increased once since 1977 and the latest year we have not even paid the cost price. Of course, we must be realistic, and therefore we have accepted a doubling of the printing price valid for the years 1984 and 1985 - and we think that we still are making a good bargain. This fact, and the rise in the general costs - which include an increasing of the price of postal service for 50% since the 1982/83 budget has done it necessary for us to set up a new budget for the years 1984 and 1985.

This budget which is confirmed by the Board of the N.J.F.s Fur Animal Division is based on 315 subscribers and a price of Dkr. 350. per volume .

Of course, we regret such a drastical increasing of the price, but we are still convinced that you will get information for your money.

Just after sending this last issue of SCIENTIFUR Vol. 7 we are going to send the invoices for the 1984 (Vol. 8) subscription. Please, handle it as soon as possible.

One novelty regarding payment is that we have arranged a postal service for your payment - Giro account No. 5 25 01 88, SCIENTIFUR, Roskildevej 48 H, 3400 Hilleroed, Denmark, and we should be grateful if so many as possible will use this way to sending their payment. (Please, state the number of invoice on the form). This way is easier and much cheaper for us instead of receiving cheques for payment to our bank. But of course, all possibilities are open.

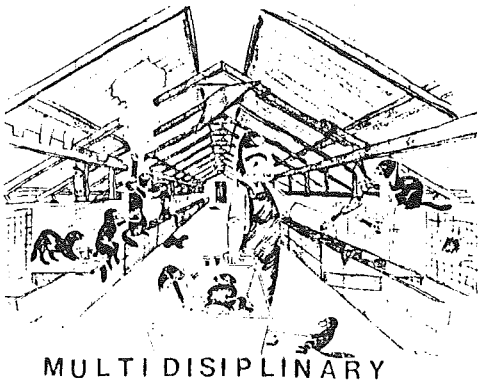
An annoying thing for the year 1984 is that the price of SCIENTIFUR is increasing. The more positive things are the international scientific congress in Paris on the 25-27 April 1984, that you will send your contributions to SCIENTIFUR as soon as possible, that the Index will be ready before the congress, and hopefully, a lot of other things as we wish for development in the business we are serving.

Finally, we wish to thank contibutors and subscribers to SCIENTIFUR for their help during the year and for all the kind remarks about SCIENTIFUR, we have received.

A MERRY CHRISTMAS AND A HAPPY NEW YEAR
TO ALL OF YOU

Best regards

Gunnar Jørgensen
editor



Original Report.

SOME OBSERVATIONS ON THE ARGONISTIC BEHAVIOUR OF MALE SILVER FOX (VULPES VULPES L.)

T. Kaleta, Instytut Hodowli i Technologii Produkcji Zwierzecej,
ul. Przejazd 4, 05-840 Brwinów, Poland.

The knowledge about behaviour of farm silver fox is very limited. Some experiments were carried out in the USSR, simulating the process of domestication /Trut, 1978/. But most experiments and observations concerned wild red fox. The ethogram of this species was created owing to investigations of Seitz /1950/, Tembrock /1957/ and Fox /1970/.

The aim of this work was to study agonistic behaviour of silver fox and compare it with behaviour of red one. Agonistic behaviour embracing various levels of aggressiveness or timidity is easy to elicit under farm conditions and there is evidence for its relationship with reproductive capacity /Nowicki, 1978/.

Material and method.

The investigations were carried out during 1980 and 1981 in the farm near Mińsk Maz. A total over 200 male silver fox were examined for finding agonistic behaviour. Each fox was subjected in the cage to the test including three responses to various stimuli: visual and auditory. Common objects like boxes and a dummy were used to this end. These objects were presented near the cage for eliciting agonistic responses. A brief period of stimulation the foxes were exposed to daily was constant /180 sec./. There was no possibility of any animal observing the behaviour of its neighbours. In order to classify behaviour of foxes, some features were particulary studied:

1/ Expression /facial, gestures and postures/
2/ Manners approaching the object
3/ Latency-the time interval elapsing between presentation of a stimulus and the end of response.

Results.

General remarks.

Animals subjected to the test showed some tenseness or alertness were ready to fight or flee. Hence the perception of the object seemed to be a releaser of agonistic responses. There were various solutions to the problem of conflict from fierce aggression to strong escape reactions. Special forms of agonistic behaviour were also observed such as "cut-off" postures/avoiding visual contact/, "freezing" postures and displacement activity /Stretching, yawing, licking mouth, alleged biting/. Some forms of vocalization: warning, alarm and territorial defence calls were recorded. It is interesting that the number of urianations and defecations was low. Occationaly patterns of hunting behaviour were observed /stalking, "mouse jump"/.

Behavioural characteristics.

Taking into account behavioural trails mentioned above, animals were divided into four groups.

Table 1. Characteristics of behavioural types.

Group	No of animals	Manner of approaching	Final sequence	Latency mean /sec/	Expression
Agres-sive	50	quick fierce attack	trying to bite object	28,3	Aggressive or neutral faciel expression
Pfleg-matic	46	quick but without aggression	sniffing	44,4	neutral
Timid	40	withdrawal escape or being motionless	-	155,7	symptoms of stress, shriving freezing cut-off acts
Variable	64	going round the cage with/without approaching	sniffing or trying to bite	81,0	defensive or neutral faciel expression cut-off acts and displace-ment activity

These groups consisted of males from 1 to 6 years old. % of old and young foxes in each group was approximated. The most differentiated behaviour was observed in "timid" and "variable" groups owing to frequency of "cut-off" and "Freezing" postures and displacement activity acts. "Cut-off" and "freezing" acts often formed sequency at the beginning of reaction.

Conclusion.

Agonistic behaviour of male farm silver fox on the whole resembled behavior of wild red fox, especially concerning facial expression and manner of approaching. There were also some differences, e.g. the forms not observed under natural conditions occurred /"cut-off" acts/ and forms common in the wild occurred with low frequency /e.g. urianation or defecation/. It seems that farm conditions have an effect on these differences /Tembrock, 1962/.

References.

1/ Fox, M.W., 1970: A comparative study on development of facial expression in canids, wolf, coyote and foxes. Behaviour /Leyden/ 36: 49-73.

2/ Nowicki, B., 1978: Zachowanie sie zwierzat gospodarskich. PWRiL, Warszawa.

3/ Seitz, A., 1950: Untersuchungen angeborene Verhaltsweisen bei Caniden. Teil 1-2, Z. für Tierpsychologie 7:1-45.

4/ Tembrock, G., 1957: Das Verhalten des Rotfuchses. Handbuch der Zoologie, Akademische Verlag, Berlin.

5/ Tembrock, G., 1962: Grundlagen der Tierpsychologie. Akademische Verlag, Berlin.

6/ Trut, L. 1978: Oczerki po genetikie powiedienia. Nauka, Nowosibirsk

Original Report.

AGONISTIC BEHAVIOUR OF MALE SILVER FOX /VULPES VULPES L./ AND ITS REPRODUCTIVE CAPACITY.

T. Kaleta, A. Frindt, M. Brzozowski, Instytut Hodowli i Technologii Produkcji Zwierzecej, ul. Przejazd 4, 05-840 Brwinów, Poland.

There is some evidence that behaviour has an effect on domestic animal production /Nowicki, 1978/. On the other hand no sharp division between an aggressiveness and sexual activity was observed in family Canidae /Fox, 1969/. E.g. sexual behaviour has some agonistic sequences. It seems that it is possible to evaluate the relationship between these factors. Silver fox was interesting subject of investigations because of our previous observations on agonistic behaviour in this species.

Material and method.

In 1980 and 1981 over 200 male silver fox were examined for finding agonistic behaviour. Special method was used to this end, including animals responses to the test. The population was divided into four "behavioural" groups aggressive, phlegmatic, timid and variable. They differed from each other level of aggressiveness. The method of this investigation was the confrontation of behavioural characteristics of foxes with their reproductive capacity. The date of birth, duration of mating period and structure of mating frequency in behavioural groups were taken into account. Each male was able to show his maximum reproductive capacity, according to the mating system used in this farm.

Results.

a/ date of birth and behaviour.

Animals were divided into five groups: born before 1 April, between 1 and 10 April, 11-20 April, 21-30 April, and after 30 April. Over 70% of aggressive and timid silver foxes were born between 10 and 20 April. Dates of birth of the remaining groups were distributed more evenly.

b/ agonistic behaviour and duration of mating period.

No statistical differences have been stated as concerns duration of mating period among behavioural groups. Hence the distribution of mating period in time was taken into account. Silver foxes were divided into six groups. For breeders four can be of interest:

- Advantageous

1) Mating period between 10 Feb./peak of female's heat i Poland/.

2) Beginning of mating before 10 Feb. and ending after 20 Feb./ embracing the whole period of sexual activity/.

- Disadvantageous

3) Ending of mating period before 10 Feb.) short-time period

4) Beginning after 20 Feb.)

The distribution of mating period of "aggressive" and "timid" groups were approximated. In these groups 50% of subjects mated in advantageous periods and only 4-6% in disadvantageous. On the other hand "variable" group resembled "phlegmatic"- over 30% of subjects mated in advantageous period and 15% in disadvantageous.

c/ agonistic behaviour and number of mates.

There was no statistical differences as concerns mating frequency among behavioural groups. The distribution of males mating for 1-17 times in behavioural groups was analysed.

Table 1. Structure of mating frequency in behavioural groups.

Group	No of males mating for times:					Total
	0	1-4	/5/Mean/	6-11	over 11	
Aggressive	2	19	8	19	2	50
Phlegmatic	2	16	8	20	-	46
Timid	3	17	5	13	2	40
Variable	3	22	9	29	1	64
Total	10	74	30	81	5	200

"Timid" group was the most interesting, because % of subjects mating for less than 5 times was over 50 and % of those mating for over 11 times was 10. There was similarity between "timid" and "aggressive" groups considering the number of males mating for over 11

times. The relationship between behavioural characteristics and distribution of males mating for 1-17 times in these groups was estimated as significant /Hellwig's nonparameter test was used/.

Conclusions.

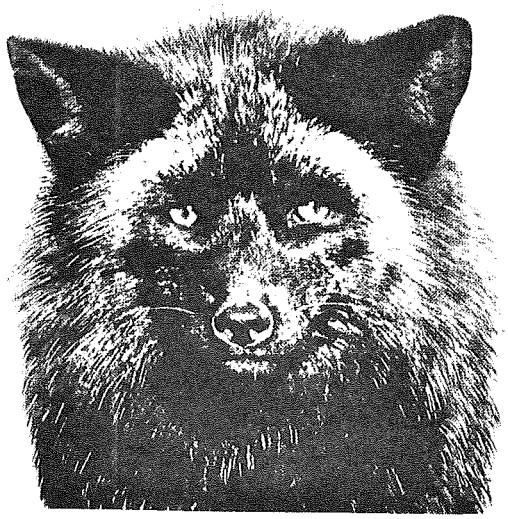
The results indicated the relationship between agonistic behaviour and reproductive features. In particularly similarity between timid and aggressive animals was showed. These foxes are perhaps better reproductors than the others. Although this thesis is consistent with previous results /Bieliajew, Trut, 1964/ i would be desirable to obtain confirmation in other investigations.

References.

1/ Bieliajew, D.K., Trut, L. 1964. Behaviour and reproductive function of animals. Bull. M.O.I.P. otd. biol. t. 63, vyp. 3.

2/ Fox, M.W., 1969. Ontogeny of prey killing behaviour in Canidae. Behaviour/Leyden/ 35: 259-272.

3/ Nowicki, B., 1978. Zachowanie sie zwierzat gospodarskich. PWRiL, Warszawa.



THE OCCURRENCE OF MINKS (MAMMALIA: MUSTELIDAE) IN POLAND.

(Wystepowanie norek (Mammalia: Mustelidae) w Polsce).

Andrzej L. Ruprecht, Tadeusz Buchalczyk, Jan M. Wójcik, Zaklad Badania Ssaków PAN, 17-230 Bialowieza, Poland.

The difference between two species: European mink and American mink (Fig. 1). Basing on the literature data the history of European mink (Mustela lutreola) occurrence in Poland is presented. European minks occurred in Poland in two areas: the western - where they became extinct already in the 19th century - and the eastern - where they were found up to World War II.

Since 1962, American minks (Mustela vison) were occasionally killed in Poland. They probably run away from the farms and adapted to the natural environment (Wielkopolska - Kujawy Lowland and Masurian Lake District). Beginning from 1972 minks were reported for Bialowieza Forest. 14 minks of undetermined species and 5 specimens of American minks were observed. The minks watched and killed in Bialowieza Forest originate probably from the new area of American minks acclimatized in number of 895 animals in Belorussian SSR during 1953-1958. The author suppose that the minks penetrated into the western part of Bialowieza Forest through the river Hwozna from the north and through the river Leśna from the south. A short account of the circumstances concerning observations of minks was given and some furs of American minks were described.

Near the burrows there were found some amounts of minks faeces and remains of preys (amphibian bones, fish scales, bones of Arvicola terrestris and Rattus norvegicus). The authors suggest to put the wild living American minks on the list of game animals with close season from March to September.

Przeglad Zoologiczny, XXVII, 1. 1983, 87-99.
3 tables, 1 fig., 17 references. Authors' summary.
In POLH with summary in ENGL.

THE COAT OF ARCTIC FOXES WITH MEDIUM-TYPE FUR AND VARIOUS DEGREE OF VEILING, AND THE POSSIBILITIES OF ITS IMPROVEMENT.

ВОЛОСЯНОЙ ПОКРОВ СРЕДНЕВОЛОСЫХ ПЕСЦОВ ПРИ РАЗНОМ РАЗВИТИИ ВУАЛИ И ВОЗМОЖНОСТИ ЕЕ УЛУЧШЕНИЯ

G.M. Diveeva, T.G. Novikova, N.P. Shelina, USSR.

For 217 animals assessed for the quality of veiling in 1973-75, significant genetic correlations of various fur traits with the degree of veiling were as follows: purity of basic colour, 0.22; purity of the colour of guard hairs, 0.16; colour of tips of undercoat fibres, 0.27; uniformity of guard hairs, 0.51; density of guard hairs, 0.49; silvery appearance, 0.56.

Nauchnye Trudy. Nauchno-Issledovatel'skii Institut Pushnogo Zverovodstva i Krolikovodstva, 21, 93-97, 1980.
3 references, 2 tables. CAB-abstract.
In RUSS.

DISTRIBUTION OF EVERGLADES MINK.

Andrew T. Smith, Daniel M. Cary, Dept. of Zoology, Arizona State University, Tempe, Arizona 85281.

Everglades mink (Mustela vison evergladensis) formerly were believed not to live in the true Everglades of eastern south Florida. Our data extends their known distribution to include this region.

Florida Sci. 45 (2), 106-112, 1982.
1 fig., 2 tables, 5 references. Authors' abstract.

GROWTH AND DEVELOPMENT OF YOUNG ARCTIC FOXES BORN IN THE SECOND LITTER IN A YEAR.

РОСТ И РАЗВИТИЕ МОЛОДНЯКА ПЕСЦОВ ОТ ВТОРОГО ПРИПЛОДА В ГОДУ

G.A. Kuznetsov, G.P. Kazakova, USSR.

For 85 cubs born after induced extra-seasonal mating, birth weight was 80-100 g, and body weight at 15, 30 and 40 days of age averaged 285, 705 and 1210 g resp. for female and 184, 698 and 1290 g for male. During rearing, 93 cubs were allowed 5-h light daily from 2 months of age, 64 were allowed 5-h light daily from 3 months, and 19 (a control group) were reared under natural light. The animals were slaughtered when the winter coat was fully developed (in May-July for the experimental animals). For the 3 groups resp., age at slaughter averaged 140, 148 and 234 days, and body weight 6.13, 6.13 and 7.06 kg for male and 5.46, 5.46 and 6.60 kg for female. Fur and pelt quality of the aniamls given 5-h light daily was within the requirements of the standard.

Nauchnye Trudy. Nauchno-Issledovatel'skii Institut Pushnogo Zverovodstva i Krolikovodstva (No. 20) 11-13, 1979.

1 table. CAB-abstract.

In RUSS.

ESTABLISHMENT AND CHARACTERIZATION OF FERRET CELLS IN CULTURE.

R.S. Trowbridge, J. Lehmann, P. Brophy, New York State Institute for Basic Research in Developmental Disabilities, 1050 Forest Hill Road, Staten Island, New York 10314.

Cells derived from the brain of a 6 wk-old ferret have been subcultured over 100 times and have undergone over 400 population doublings in vitro. These cells, referred to as Mpf cells, have an absolute efficiency of colony formation in excess of 45%, exhibit af mean population doubling time of 12.5 h, possess ferret-specific antigens, and have isozymes with electrophoretic properties that are the same as those of isozymes found in ferret liver. The cells exhibit a cytopathic effect and support the synthesis of progeny virus when they are infected with the viruses of lymphocytic choriomeningitis. Newcastle disease, pseudorabies, Sindbis, vaccinia, and vesicular stomatitis. The passage level of the Mpf cells, their elapsed number of population doublings, their possession of ferret-specific antigens, and the comigration of four isozymes obtained from these cells and ferret liver define the cells as an established line of ferret cells.

IN VITRO, Vol. 18, No. 11, Nov. 1982.

5 tables, 7 figs., 18 references. Authors' summary.

BIOLOGICAL FINDINGS AND DOMINANT PATHOLOGY OF THE PROCYONIDES.

(Données biologiques et dominantes pathologiques des procyonides).

Biedermann-Valentin, Catherine, Ecole Nationale Veterinaire D'Alfort, France.

At the end of this work we could prove that our knowledge about the Procyonides is still fragmentary on some area. This very heterogeneous family has produced very few studies due to the fact that mothers are caught and the reduced density of the animals population.

Thanks to the national parks one can think that more precise findings on reproduction, behaviour and pathology will be discovered in the near future.

After having scaped to a nearly definitive destruction, the Gran Panda does not seem more threatened than other species. One may await that the taken of conciousness by human beings in relation to protection of nature will alow the survival and multiplication of these animals, otherwise to highly attacked.

The study includes:
Introduction. Classification. General characteristics of the Procyonidae. Anatomical studies. Relation of the Procyonides or their milieu (habitat). Pathology. Ecto and Endoparasites. Chase and Protection. Procyonidae in captivity. Nutrition. Reproduction. Longevity. Pathology: viral diseases, bacterial diseases, parasitory diseases, nutritional diseases, neoplasms, behavioural diseases. Conclusion. Bibliography.

These, Ecole Natl. Vet. d'Alfort, France, 157 pp, 1980.
8 pp of references.
In FREN.

Summary by
Nelly Blumenkrantz.

COMPARATIVE QUANTITATIVE STUDIES ON POLECATS AND FERRETS.

(Vergleichende quantitative Untersuchungen an Iltissen und Frettchen).

Espenkötter, Elmar, Inst. für Zoologie der Tierärztlichen Hochschule Hannover.

1. The weights of brain, heart, liver, spleen, kidneys, adrenals, thyroid, testicles and ovaries of 10 female and 16 male polecats and 22 female and 20 male ferrets were determined and related to the total body weights. The brain weights of polecats and ferrets examined by other scientists were also used.

2. By means of quantitative allometric methods the intraspecific allometric exponent and the organ coefficient of the relations between organ weight and body weight of polecats and ferrets could be calculated. The correlation of the allometric line of the dates was equal with polecats and ferrets, except for those with testicals and ovaries, for which allometric lines could not be received.

3. Approximate isometry was observed for liver and spleen, whereas negative allometry was proved for brain, heart, kidneys, adrenals and thyroid.

4. Weight reductions for ferrets were found out for brain, heart, liver, kidneys, adrenals and thyroid. Only the spleen increased under the influence of domestication.

5. At the age of two to 18 months the brain weights of polecats and ferrets could be proved to decrease without any connection with the variation of the body weights.
   The body weights themselves decreases in a similar way but only after the 3rd month and up to the 21st month.

Hannover Tierärztliche Hochschule. Inaugural-Dissertation, 1982. 83 pp.
82 references, 16 tables, 18 figs. Author's summary.
In GERM, summary in ENGL.

BASIC ECOLOGICAL INFORMATION FOR THE MANAGEMENT OF CHINCHILLA LANIGERA IN THE IV REGION.

(Antecedentes ecologicos basicos para el manejo de Chinchilla lanigera en la IV region.)

Rodríguez, M . Jamie, Facultad de Ciencias forestales, Universidad de Chile, Casilla 9206, Santiago, Chile.

Due to the fact that the Chinchilla lanigera is a native species of great fur interest which is in danger of extinction, the ecological studies performed in this paper are primarily based on the determination of variations of population of the species concerning the conditions of the ecosystem of its habitat.

The author is working on the hypothesis that the population of Chinchilla lanigera changes in relation to the conditions of the ecosystem where it lives.

Preliminary information on the variation of population through the year in a common habitat and variations detected in various places in relation to the type of vegetation and associated fauna is presented.

A scheme of work which allows to define the basic ecological information required for the management of the Chinchilla is drawn.

Congreso Internacional de Estudios de Zonas Aridas y Semiaridas la Serena (Chile) 15-19 Jan. 1980.

(Summary only).

Author's summary.

Translated by
Nelly Blumenkrantz.

LIMITING FACTORS OF THE CHINCHILLA LANIGERA POPULATIONS.

(Factores limitantes de las Poblaciones de Chinchilla lanigera).

Durán, Juan Carlos, Facultad de Ciencias Forestales, U. de Chile, Casilla 9206, Santiago, Chile.

The limiting factors for the management of the Chinchilla lanigera in its natural habitat are analyzed.

The condition of species on danger of extinction of this native rodent is accentuated by various additive factors present in the ecosystem where it develops.

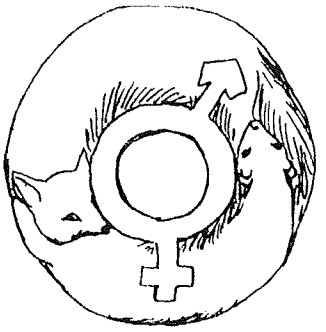
The need to protect this species in a better medium obliges to improve its habitat.

The poor alimentary conditions suffered by this rodent influence the increase of neonatal and juvenile mortality.

The author discusses the effect of various factors on the populations of Chinchilla lanigera, i.e. periods of infertility of the soils, degradation of the habitat because of overpasture and irrational extraction of wood and coal, depradation by foxes, competence with other rodents, illegal hunting, ecto and endoparasites and bacterial infections.

Preliminary information about positive effect of protection of the habitats is presented.

Congreso Internacional de Estudios de Zonas Aridas y Semiaridas. Resumenes de Trabajo. Santiago, Chile, p. 104, 1980.
(Summary only). Author's summary
In SPAN. translated by Nelly Blumenkrantz.



GENETICS

THE GENETIC FACTOR FOR COLOUR TYPES IN RANCH BRED FOXES.

Norodd Nes, Outi Lohi, Allan Olausson, Hans Toftegaard Hansen, Dept. of Animal Husbandry and Genetics, The Norwegian College of Vet. Medicine, Oslo, Norway.

A Scandinavian system of gene symbols for colour phases in red and blue foxes was officially confirmed by the board of the Scandinavian Association of Agricultural Scientists, Fur Animal Division the 14th of December 1981.

Fig. 1. *The Scandinavian gene symbols for colour types of Vulpes vulpes*

English name	Scand. name	Genotype								
Red fox	Rödräv	AA	BB	CC	GG	PP	SS	RR	ww	mm
Recessive mutations										
(*a*) in red fox:										
Alaska silver fox	Alaska silverräv	aa								
Standard silver fox	Standard silverräv		bb							
Albino	Albino			cc						
(*b*) in silver fox:[a]										
Burgundy	Burgunder		bb		gg					
Pearl fox 1	Pärlräv 1		bb			pp				
Pearl fox 2	Pärlräv 2		bb				ss			
Radium fox	Radiumräv		bb					rr		
Dominant mutations										
in silver fox and red fox:										
White face	White face		bb						Ww	
White marked red fox	Kragräv (Ringrev)								Ww	
Platinum	Plantina		bb						W^Pw	
Gold platinum	Guldplatina								W^Pw	
Georgian white	Georgian white		bb						W^Gw	
Arctic marble	Arctic marble		bb							Mm
Arctic marble white	Arctic marble white		bb							MM
Sun glow	Sun glow									Mm
Sun glow white	Sun glow white									MM
Recessive-dominant combinations										
Pearlatina	Pärlatina		bb			pp			Ww	
Pearlatina	Pärlatina		bb				ss		Ww	
Glacier blue	Glacier blue		bb			pp			W^Pw	
Glacier blue	Glacier blue		bb				ss		W^Pw	

[a] Regarding mutations in silver fox and combination types including silver fox this list of genetic formulae comprise only AAbb for Standard silver fox, other possible genotypes of silver foxes are Aabb = Sub-standard, aaBB = Alaska silver fox, aaBb = Sub-Alaska and aabb = Double Recessive silver fox.

Table 2. *The Scandinavian gene symbols for colour types of Alopex lagopus*

English name	Scand. name	Genotype						
Blue fox	Blåräv	CC	DD	EE	FF	GG	II	ss
Recessive mutations								
Albino	Albino	cc						
White fox	Viträv, polarräv, fjellräv		dd					
Arctic pearl	Arktisk pärl			ee				
Saphire	Safirräv				ff			
Arctic blue	Arktisk blå					gg		
Dominant mutations								
Lapponia/Bothnia pearl	Lapponia/Botnia pärl						LI	
Blue shadow	Blue shadow (shadow)							Ss
Jotun fox/Blue star	Jotunräv/Blue star							$S^J s$
Haugen platinum	Haugenplatina							$S^H s$

In this article the system is presented and the colour phases are shortly described.

Acta Agric. Scand. 33, 1983, 273–279.
2 tables, 38 references. Authors' summary.

IDENTIFICATION OF Lpm-ALLOTYPES IN MINK α_2-LIPOPROTEINS BY MEANS OF PREPARATIVE ULTRACENTRIFUGATION.

ИДЕНТИФИКАЦИЯ Lpm-АЛЛОТИПОВ α_2-ЛИПОПРОТЕИНОВ НОРОК МЕТОДОМ ПРЕПАРАТИВНОГО УЛЬТРАЦЕНТРИФУГИРОВАНИЯ

O.K. Baranov, V.I. Yermolaev, M.A. Savina, Inst. of Cytology and Genetics, Academy of Sciences of the USSR, Siberian Division, Novosibirsk.

The density class accessory of 8 mink α_2-lipoprotein allotypes are determined by means of preparative ultracentrifugation. It is found that Lpm1, Lpm2, Lpm3, Lpm4, Lpm5, Lpm7 and Lpm8 are determinants of lipoproteins with density exceeding 1.210, i.e. they are VHDL. The allotypic marker 6, which has been earlier assigned by other criteria to Lpm group, belongs to mink lipoprotein, which distributes during ultracentrifugation at the region of low and, partially, high density.

GENETIKA, 13/3, 542–544, 1977.
10 references. Authors' summary.
In RUSS with summary in ENGL.

THE VARIATION OF COAT COLOUR IN ORCHID-PASTEL MINK.

ИЗМЕНЧИВОСТЬ ВОЛОСЯНОГО ПОКРОВА НОРОК ОРХИД

G.A. Kuznetsov, V.I. Bubnov, N.I. Trofimov, N.A. Terementsev, USSR.

For 421, 270 and 310 animals or the genotype kokob- og kokb-, kokbb and kokbbpp resp., the percentage with highest points (5) awarded for colour was 17.3, 14.4 and 9.0, the percentage with 4 points was 67.0, 30.4 and 39.7, and the percentage with < 4 points was 15.7, 55.2 and 51.3. For the 3 genotype groups, the percentages of animals with dark coats were 19.2, 0.8 and 8.1 resp., with coats of medium shade 53.3, 30.0 and 50.6, and with light coats 27.3, 69.2 and 41.3. The percentages of animals with black eyes were 50.6, 7.4 and 90.6; the remaining animals had brown eyes.

Nauchnye Trudy. Nauchno-Issledovatel'skii Institut Pushnogo Zverovodstva i Krolikovodstva, No. 20, 14-17, 1979.
3 tables. CAB-abstract.
In RUSS.

THE HERITABILITY OF LIVE WEIGHT IN STANDARD MINKS, ESTIMATED ACCORDING TO DIFFERENT STATISTICAL METHODS.

(Odziedziczalność masy ciala u norek standard szacowana przy zastosowaniu róznych metod statystycznych).

Grazyna Jezewska, Janusz Maciejowski, 20-627 Lublin, ul. Pana Wolodyjowskiego 3 m. 57, Poland.

During two subsequent years live weights of young Standard Minks was registered over the period of their complete somatic development (November). The litters investigated were after one father. In total, recorded were the live weights of 864 animals from 202 litters. The heritability was estimated from an analysis of variance of families, separately for males (h^2 = 0.585) and females (h^2 = 0.983), what gave clearly overestimated

results. The h^2 estimation on the basis of an analysis of variance of sib and half-sib, jointly for males and females after correcting the data for sex dimorphism resulted in values similar (h^2 male female = 0.321) to those obtained according to the dam-offspring regression method (h^2 = 0.418). However, this latter method is much better for practical application.

Prace i Materialy Zootechniczne 27, 1981, 7-15.
4 tables, 10 references. Authors' summary.
In POLH. Summaries in RUSS and ENGL.

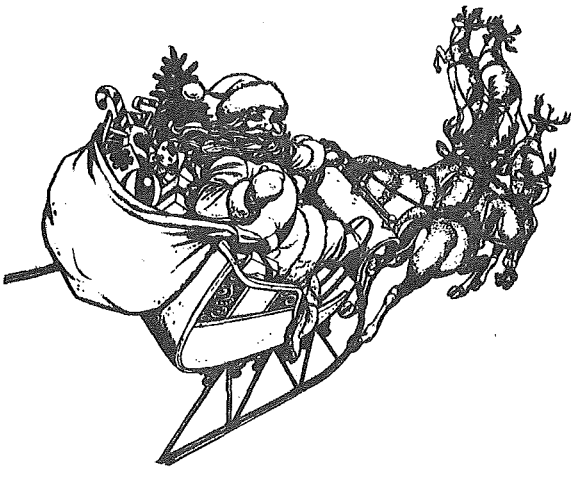
HYBRIDS OF THE FERRET WITH THE EUROPEAN POLECAT.

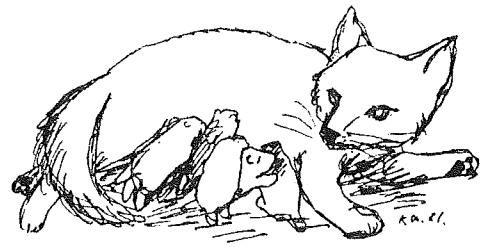
ТХОРЗОФРЕТКИ — ГИБРИДЫ БЕЛОГО И ЧЕРНОГО ХОРЬКОВ

E.M. Prokhorova, K.N. Gruzdev, USSR.

Data are reported on mustela furo x M. Putorius hybrids imported from Poland to the USSR in 1974. Adult body weights averaged 850 and 1400 g in female and male resp. Animals of both sexes become sexually mature at 9-10 months of age. There are 2 breeding seasons per year, the 1st beginning in late March or early April. Gestation length is 42 days. The size of 1st litters averages 10-11. Weaning takes place at 5-6 weeks of age.

Trudy. Vsesoyuznyi Nauchno-Kontrol'nyi Institut Veterinarnakh Preparatov, 29, 145-148, 1980.
1 fig., 1 table. CAB-abstract.
In RUSS.





Original Report.

REPRODUCTION

AN ATTEMPT TO EVALUATE A REPRODUCTIVE CAPACITY OF MALE SILVER FOX /VULPES VULPES L./ BY ITS SEMEN VALUATION.

M. Brzozowski, A. Frindt, T. Kaleta, Instytut Hodowli i Technologii, Produkcji Zwierzecej, ul Przejazd 4, 05-840 Brwinów, Poland.

The result of breeding animals depend upon their reproductive capacity /Lush, 1961/. It concerns fur animals too, but keeping bad reproductors, e.g. in breeding silver foxes, has stronger effect because of polygamic mating system /Slawon, Woliński, 1975/. In spite of this knowledge no effective method of evaluation reproductors in silver foxes was elaborated. Records of semen collection from foxes /Aamdal, 1972/ revealed the possibility of evaluation by semen examination. Authors of this report pursued this end.

Materials and methods.

A total of 26 males silver fox one year of age were the subject of investigations. They were chosen randomly from the population of the state farm Witkowizna. The semen was collected by electroejaculation. /Parameters of current: 50 Hz, 8-10 mA and 1.5-3 V/. A total of 105 ejaculates were obtained. The value of ejaculates was measured and an interval scale was used to this end:

"0"-lack of ejaculate
"1"-excertion of reproductive supplementary glands only
"2"-no sperm motility
"3"-proper motin reveals 30% of spermatozoa only
"4"-minimum 0.8 ml of ejaculate is obtained with fertile spermatozoa. Over 30% of spermatozoa reveals proper motion.

From each fox the semen was collected several times. Than, reproductive capacity could be evaluated. The value of reproductor was calculated

according to the formula:

$$W = \frac{a + b}{c}$$

Where: "a" is sum of values of ejaculates, "b" -number of ejaculates with mark "4", "c"-total number of ejaculates collected from male, "W"-value of reproductor.

On the ground of index magnitude, six groups were divided:

Value of male	Index "W"
outstanding	4,00
very good	3,99 - 3,50
good	3,49 - 3,00
average	2,99 - 2,50
poor	2,49 - 2,00
bad	2,00.

Results.

Out of the total of ejaculates over 50% was evaluated at "4". There was also 70% of males in groups: outstanding, very good and good. Detailed results - see Table 1 and 2.

Table 1. The evaluation of the quality of ejaculates.

Value of ejaculate	1980		1981		1980 and 1981	
	No of TRIALS	%	No of TRIALS	%	No of TRIALS	%
0	2	8	13	16.25	15	14.3
1	2	8	5	6.25	7	6.7
2	1	4	9	11.25	10	9.5
3	5	20	13	16.25	18	17.1
4	15	60	40	50.00	55	52.4
Total	25	100	80	100.00	105	100.00

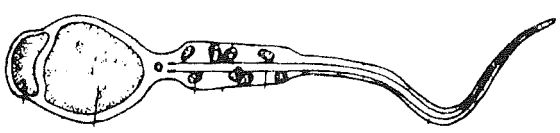


Table 2. The reproductive capacity of examined male silver foxes.

Value of male	No of males	% of population
Outstanding	10	40
very good	4	16
good	3	12
average	3	12
poor	2	8
bad	3	12
Total	25	100

Conclusions.

The method seemed to be good for an evaluation of reproductive capacity But there is no possibility of this evaluation on the ground of only one collection from each male.The quality of ejaculate which was collected for the first time had no effect on evaluation of reproductive capacity on the whole, in this animal.

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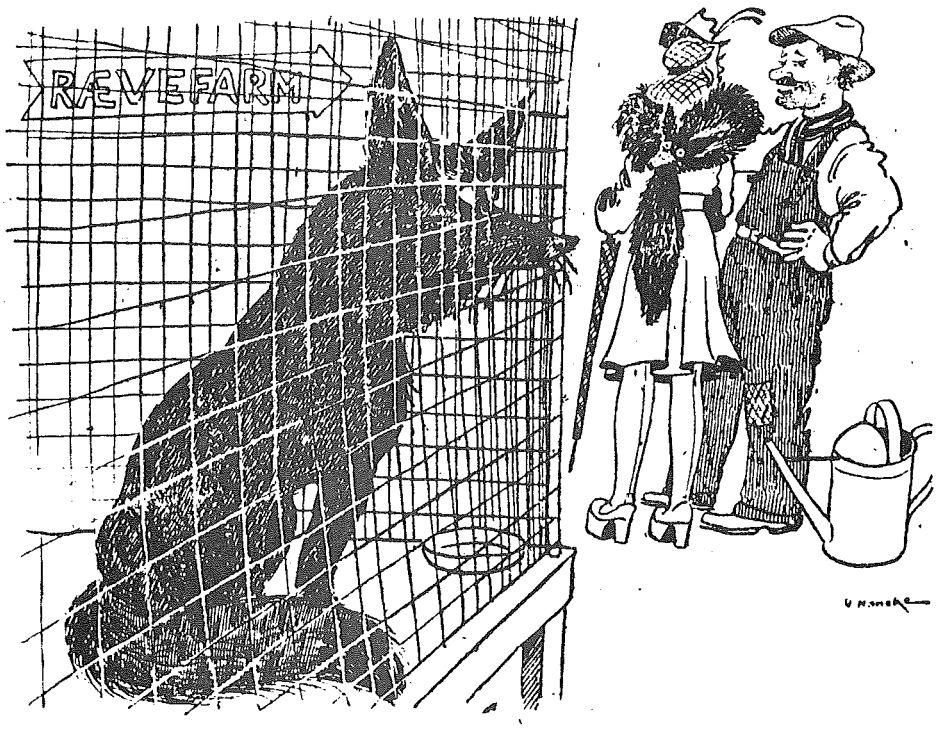

Original Report.

THE POSSIBILITY OF SEMEN COLLECTION FROM MALE SILVER FOX /VULPES VULPES L./

M. Brzozowski, T. Kaleta, A. Frindt, Instytut Hodowli i Technologii Produkcji Zwierzecej, ul Przejazd 4, 05-840 Brwinów, Poland.

In this work some experiments were made to estimate the possibility of semen collection from male silver fox. Investigations took place under fiels conditions and the method of electroejaculation was used. The mastery of the technique of insemination would allow to achieve theoretical and practical aims. Artificial insemination enables to better utilize good reproductors and successfully mate the females in the late period of heat.

There are several published reports on semen collection by electroejaculation from species of Carnivora. Chronopulo /1961/ used this method in silver fox, Aamdal /1972/ and Szabrniak /1981/ in blue one. Aulerich et al. /1972/ examined mink to this and ferret was investigated by Shump /1977/. Seager et al. /1980/ collected semen from over 100 species of Carnivora. In spite of these records no optimal method of semen collection from silver fox was elaborated. Authors of this report pursued this end.

Material and method.

The subject of investigations were male silver foxes one year of age, which were chosen randomly from the population of the state farm Witkowizna. A total of 26 males were examined during 1980 and 1981. In 1980 - 25 ejaculates were obtained from 9 males, and in 1981 - 80 ejaculates from 17 animals. It was necessary to immobilize foxes because of their wildness. The special table was used to this end. This table ensured easy access to the rectum and to the reproductive organs of animals. The proper electrode for production of erections and ejaculations was selected in the course of several trials /100 mm in length, 5 mm in diameter/. The electrode had also four copper rings spaced at an optimum distance from each other.

The source of electric stimuli was electroejaculator which could produce impulses with variable parameters /voltage, current intensity and frequency/.

Direct or alternating current could be used. The complete cycle of electro-ejaculation consisted of 5 sec. stimuli and the same intervals. In 1980 the maximum time of stimulation was constant /360 sec./. In 1981 this time fluctuated between 4 and a few minutes. Each fox had intervals between semen collections fluctuating from 3 to 11 days in 1980 from 1 to 17 days in 1981. The semen was collected in the collection utensil with water jacket.

Results and discussion.

Erections and ejaculations were typical responses to electric stimuli. Erection occurred a minute after the beginning of stimulation. Ejaculation occurred in another 2-3 minutes and was extended to 4 min. At the time of simulation copulation movements were occasionally observed. This method of semen collection failed in the case of one, very aggressive male only. Hence electroejaculation proved to be an efficient method /% of efficiency was 95/. Results obtained by Szabrniak /1981/ in blue fox were approximated. It seems that the quality of ejaculate depended upon the frequency of collections. Out of the total of ejaculated collected for the first 76% had good quality. Only 28% of ejaculates collected 1-2 days after the first collection had this quality and 79% of those which were collected 3 and more days after the first collection. These data were consistent with results obtained by Aamdal /1976/ in blue fox.

His experience showed that collection must be limited to two or three times per week. The optimum current parameters were: 50 Hz, 8-10 mA and 1.5-3 V. By applying this alternating current 90% of valuable ejaculates could be obtained. Parameters used by other authors were higher: Chronopulo /1961/ -40-60 mA, 50 V, Szabrniak 1981/ -40 mA, 10 V. The optimum total time of simulation - 9-13 min was 2-3 times longer than used by the authors mentioned above. Martin /1978/ showed that prolongation of the time of stimulation favourably influences the result of electroejaculation.

Conclusions.

1/ Electroejaculation seemed to be an effecient method of semen collection from silver foxes.

2/ In male silver fox one year of age, the frequency of semen collection must be limited. There should be 3-day intervals between collections from silver foxes.

3/ Parameters of alternating current: 50 Hz, 8-10 mA and 1.5-3 V we conducive to greater efficiency of semen collection.

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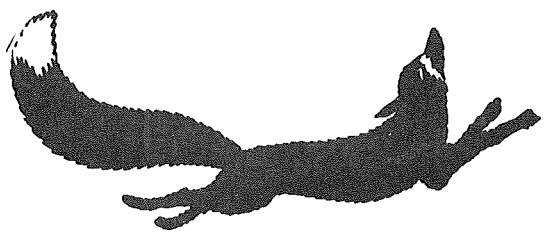

Original report

CLOMIPHENE CITRATE TREATMENT FOR STERILITY IN MINK MALES.

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Introduction

The occurence of sterility in mink males is common and in some breeds over 20% of the males may be infertile (Onstad,1967; Tung et al.,1981; Sundqvist & Gustafsson,1983). The methods at present used to eliminate the sterile males from breeding are the sperm test and testicle palpation (Rottensten,1959; Onstad, 1967; Venge,1973; Sundqvist & Gustafsson,1983; Rietveld,1983). Also by measuring the serum testosterone concentration in early February it is possible to identify the sterile males due to their significantly higher level of testosterone as compared with the fertile ones (Sundqvist & Lukola, 1983). Since in many cases of primary sterility there may a question of delayed puberty, attempts have been made to accelerate the sexual maturation by administration of gonadotropin to males with a slow testicular development (Jöchle & Lamond, 1980; Valtonen et al.,1982). In the present study the effect of an antiestrogenic agent, clomiphene citrate, on the sperm count of sterile mink males was tested. This drug, which is thought to be active at the hypothalamic level, has since 1961 succesfully been used to induce ovulation in anovulatory women (Greenblatt,1961). This agent has also been used to treat oligospermic men and definite improvements in sperm count and fertility are reported (Check & Rakoff, 1977; Epstein,

1977; Poulson & Wacksman, 1976; Schellen & Beek, 1974; Thompson & Melliger, 1965). The present results clearly show that clomiphene citrate is active also in sterile mink males and an improvement in sperm count is readily obtained.

Materials and methods

A group of 12 sterile, aspermic mink males of Pastel breed were given 10 mg/kg/day clomiphene citrate (STAR) for 10 days during the breeding season. The drug was mixed in the food and this method of administration prooved to be convenient and reliable. A control group of 10 sterile males not receiving the drug was used. The sperm count was tested as described by Sundqvist & Gustafsson (1983). All animals were kept under identical standard conditions in an open air farm in South-Western Finland.

Results

As shown in Table 1 the males that were found to be sterile in the beginning of the breeding season remained so throughout the whole season. In the group that received clomiphene citrate 50 % of the males showed improved sperm counts (Table 2). The response to clomiphene treatment was found to be very quick and improved sperm counts were obtained already after 1-2 days of treatment. The highest spermcounts were obtained after 4-6 days of treatment. In only one male (53-83), however, the sperm count exceeded 100 $x10^6$/ ml and three of the females, with which this male was mated, whelped. The rest of the males, in spite of showing improved sperm counts, remained subfertile and were unable to fertilize any female.

Discussion

The mechanism of action of clomiphene citrate is not fully understood. Many data, however, suggest that the gonadotrophic effect

Table 1. Sperm counts ($x10^6$ spermatozoa/ml) of sterile mink males.

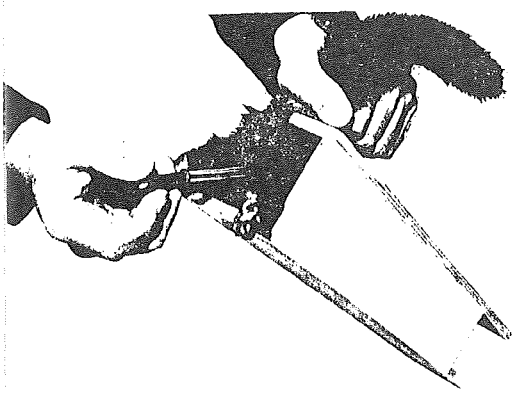
	Dates sampled							
Male	7.3	8.3	9.3	10.3	12.3	14.3	16.3	18.3
316-82	0.0		0.0					0.0
229-83		0.0	0.0				0.0	
235-83		0.0	0.0				0.0	
286-83			12.4	8.1			0.3	
256-83	0.0	0.0						
238-83	0.0	0.0					0.0	
212-83		0.0	0.0		0.0			
171-83		0.0					0.0	
159-83		0.0	0.0					0.0
151-83		0.0		0.0				

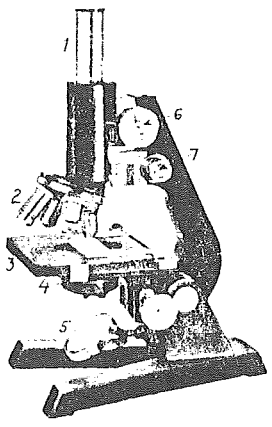
Table 2. Sperm counts ($x10^6$ spermatozoa/ml) of sterile mink males treated with clomiphene citrate.

	Dates sampled							
Male	7.3	8.3	9.3	10.3	12.3	14.3	16.3	18.3
108-81			0.0	26.8	68.8	23.3		10.0
32-83	0.0		11.5		15.6		7.4	4.1
38-83		0.6	15.3		22.8		25.2	11.1
412-82		1.3	0.5		5.9			0.0
53-83		0.0	0.0		89.3	105.7		53.6
43-83		0.6	0.9	1.2	4.0	6.9	5.9	
45-83				0.8		0.0	0.4	
44-83			0.0	0.0		0.0		0.0
395-82		0.0	5.3	66.6			32.4	16.7
36-83			0.0	0.0			0.0	0.0
33-83			2.7	15.9	10.2	11.5		0.6
32-83	4.7			5.9				0.0

The clomiphene treatment started 8.3

of this agent is produced by its antiestrogenic effect on the hypothalamus. By counteracting the inhibiting action of estradiol in the hypothalamus, GnRH is released with a subsequent rise in the blood LH and FSH concentrations (Greenblatt, 1961; Bishop,1970). In sterile mink males the serum testosterone concentration starts to rise normally in December but fails to decline in February before the onset of the breeding season (Sundqvist & Lukola, 1983). In fertile males, on the other hand, a very steep drop in the testosterone level is observed in February. The rise in the testosterone level in sterile mink males is an indication of functional Leydig cells and a functional hypothalamus-hypophysis axis. The onset of spermatogenesis implies that the Sertoli cells are sensitized to FSH in order that the metabolic processes inside the cells initiated by the formation of cAMP can take place. It is also well established that FSH acts synergestically with testosterone in maintaining the spermatogenesis (Ritzen et al., 1981). In the light of these observations it may be suggested that Sertoli cell activation may be the key event in clomiphene action in sterile males. This activating effect might be produced by a FSH surg induced by clomiphene citrate. A possible direct interaction of clomiphene citrate with Sertoli cells must, however, not be excluded. Whatever the mechanism behind the initiation of spermatogenesis in sterile mink males by clomiphene citrate is, the present results clearly show that this agent induces a very fast improvement of sperm count in sterile mink males.





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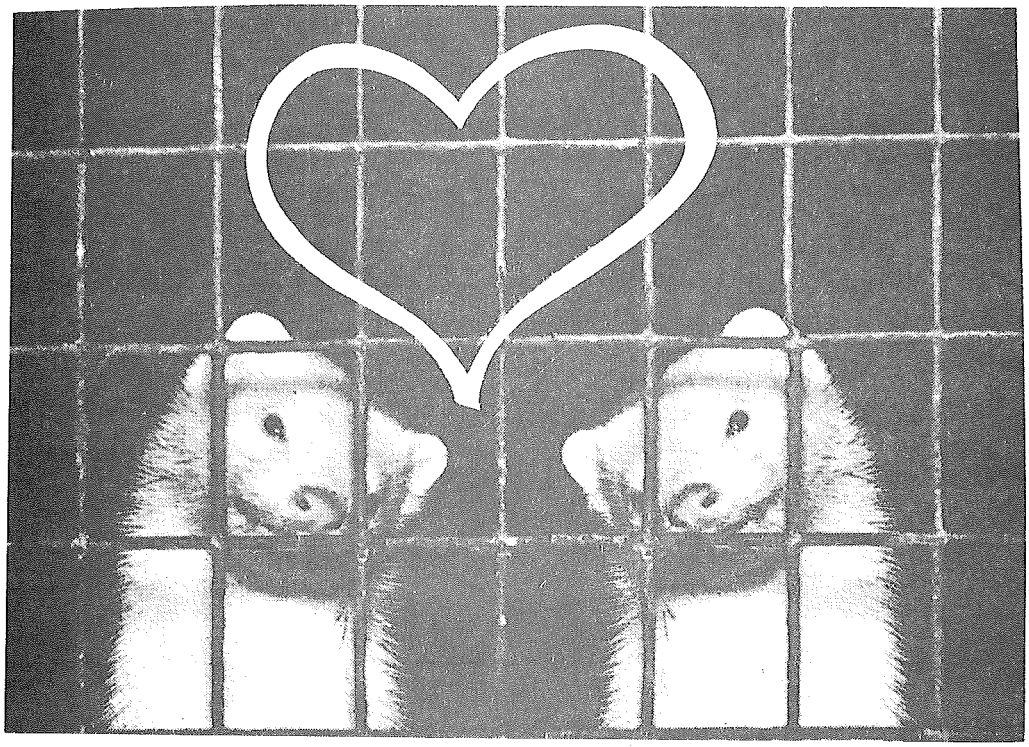
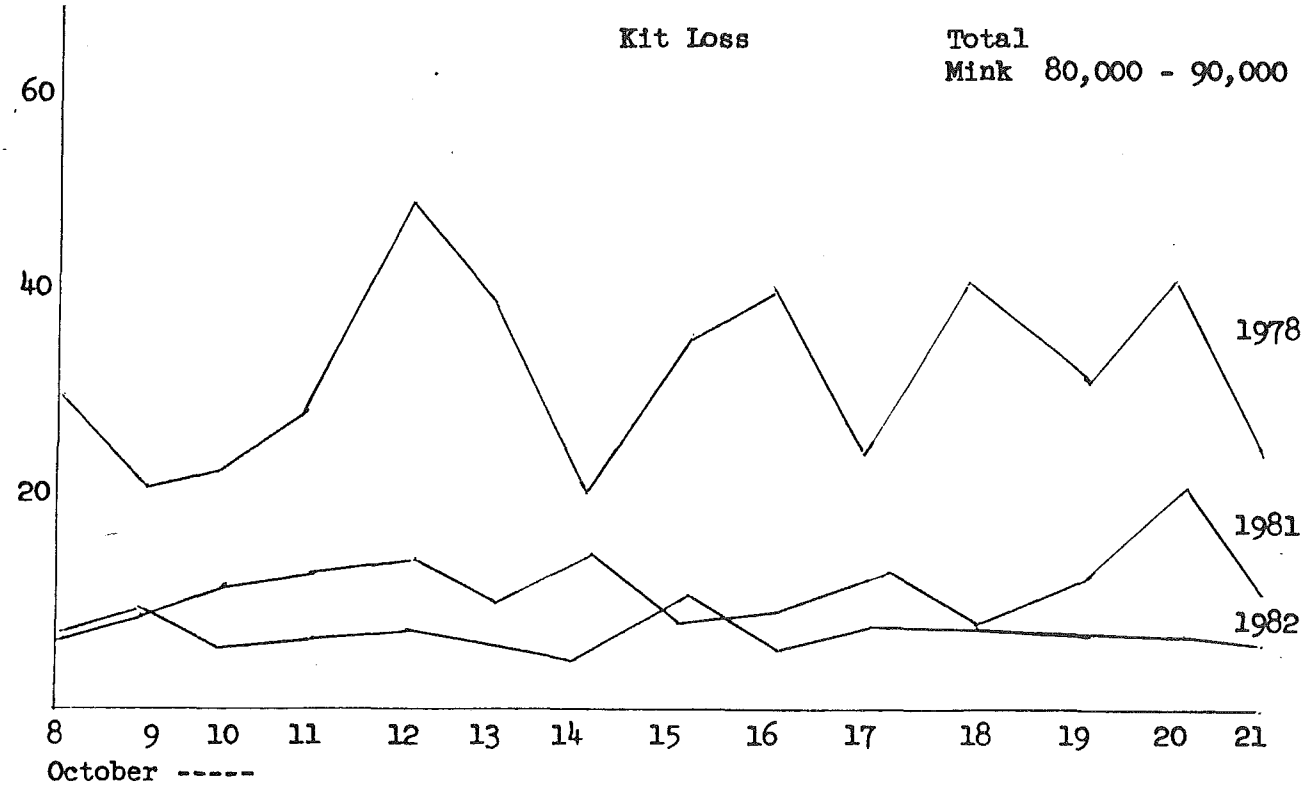


Original Report.

Further Progress in Management at Northwood Fur Farms Since Vedbaek - 1980

Anthony A. Rietveld, Northwood Fur Farms Inc., Box 40, Cary, ILL. 60013, USA.

The closing sentence of my presentation in Vedbaek was "Hopefully we can report in 1984 that we have been successful". The latter referred to our C.E.P. program that we started in the fall of 1979. Work has been going on diligently since that time, and as of the spring of 1982 we have had a breeding herd that was C.E.P. negative. This, of course, was accompolished in stages ... 1980 - one-third, 1981 - two-thirds, and 1982 and 1983 a complete negative herd at breeding time. Right now our incidence is at a very low level. In May of 1983 we found only two positives out of 1,029 females tested, as a direct result the overall losses decreased significantly. The graph shows a typical example of this.



Not only are the losses lower, but the quantity and the size of the mink are better.

The first year we took the Biblical approach of Noah's Ark, anything that showed negative, after two or three consecutive tests, was concentrated in a area of the farm that was thoroughly cleaned and disinfected. The progeny of these mink have served as the foundation of our present herd. Parallel to C.E.P. testing we have put genetic pressure on reproduction and lactation both. By only selecting breeders from litters that have 5 or better average in mutations and 4 or more in the darks. Furthermore, selection is made of the kits that are above the mean average weight at 3 weeks of age. As a result, of all of the above, we produced in 1983, out of 18,800 females, a crop of 104,500 kits at ten days of age. The average weight of the kits at 3 weeks of age has improved by 13% in a matter of four years.

And as we feel that our health and feeding practices are at an optimum for the present state of the art it is reasonable to perceive that improvement, if any can be made, has to come genetically.

Over the years we kept in close contact with Dr. Cyril Adams (1) and during that time we have developed a technique with vasectomized males that could lead to better genetic control, as long as the days of artificial insemination are not here.

The strength of our breeding program lies in multiple matings, this has given us a high conception rate and a very good overall reproduction. But this strength is a weakness from a genetic point of view as it is very hard to pinpoint heritage this way.

Our ideas to control parentage are as follows ... we select the females for this purpose from that portion of the herd which goes into second parity. This eliminates all low and nonproducing females from that year class. For the males we found that if we prescreened them with the help of electro-ejaculation, as published by Dr. Richard J. Aulerich (2), one can be assured of fertile animals.

The advantage of this technique is that it can be done prior to breeding in the month of February, rather than taking samples from interrupted matings, which has to be done during breeding time.

From past experience we knew we could get a very good conception rate when vasectomized males were followed up immediately with a fertile male. After two years of pilot experiments we felt confident to broaden our base in 1983. The method of electro-ejaculation is adequately described by Dr. Aulerich, it can be done at a farm level providing one has animal caretakers that have more than an average education. In our case, all those involved have four years of animal science education and have reached a Bachelors level.

We screened a total of 518 males and the semen was observed through a microscope and was scored on a comparative basis. Table A gives percentages. One hundred fifty-five males were out of a very high grade dark group and as can be seen from Table B, they scored lower than the average. For our experiment we used only the males that scored triple plus, out of Column B.

SPERM EVALUATION

	A	B
NUMBER	518	155
	%	%
-	10.6	20.0
+	23.9	24.5
++	38.2	26.4
+++	18.5	14.8
++++	0.6	--
No Test	2.7	9.0
Urine	4.4	5.2

All the males that scored minus were eliminated before breeding season and were pelted in late February. Sperm checks were made from a smear made from the epididymides, no activity showed here either. The mink that scored "no test" were used during our normal breeding season, after breeding these were pelted and only one of those came up with a positive smear from the epididymides.

From a practical point of view it is important that mink are deprived of water before semen collection, as urine can interfere with the semen sample.

Seventy-five two year old females were selected from the herd with a good fur quality and above average reproduction. Matings were started on the 10th of March. Fourteen vasectomized and twelve fertile males were available, the length of the vasectomized matings was more than 20 minutes. In most cases these matings were interrupted and the females immediately exposed to the fertile males. When the caretakers are reasonably quiet, the second mating then follows in a matter of minutes. By the 13th of March all the mink were mated, except two. These were eliminated and brought into the main herd. Two mink died, one escaped after mating and one is not accounted for in the data. This experiment yielded us at birth, 409 kits born alive and 40 born dead. Four mink failed to reproduce.

	Total	Mated	Whelped	Escaped	Dead
Females	75	73	66	1	2 (Pregnant)

		Total	Per Female Mated	Per Female Whelped
Kits at Birth	Alive	409	5.84	6.19
	Dead	40	.57	.60

All the males in the program sired litters and as the vasectomized males were of a different color hybrids would have shown up in the crop if they were fertile. As in the past, no hybrid kits were born. This proves vasectomy can be done on mink successfully. At the time of writing 388 kits are still alive and we feel we are on our way to a positive control of genetics at Northwood Fur Farms.

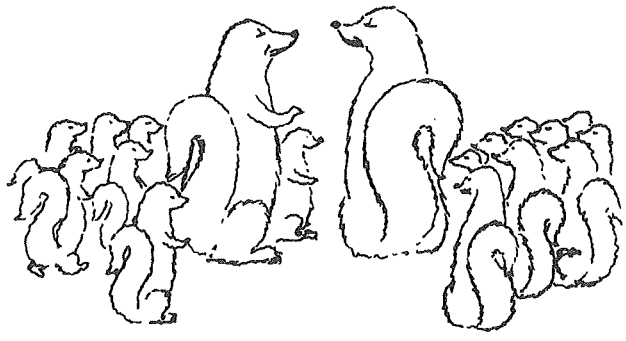
References Cited

1) Theriogenology, May, 1981, Vol. 15, No. 5. Duration of Copulation & Fertility in the Mink, Mustela Vison, C.E. Adams & A.A. Rietveld, A.R.C. Institute of Animal Physiology, Animal Research Station, 307 Huntington Rd., Cambridge CB3 0JQ, England, and Northwood Fur Farms, Inc., PO Box 40, Cary, Ill. 60013.

2) Journal of Animal Science, Vol. 34, No. 2, February, 1972. Electro-Ejaculation of Mink (Mustela Vison). Richard J. Aulerich, Robert K. Ringer & Carol S. Sloan, Michigan State University, East Lansing 48823.

3) Laboratory Animal Science, Vol. 26, No. 6, 1976. Semen Volume & Sperm Concentration in the Ferret (Mustela Putorius), Ann U. Shump, Richard J. Aulerich & Robert K. Ringer.

4) Journal of the American Veterinary Medical Association, Vol. 173, No. 10, 1978. Semen Collection by Electro-Ejaculation in the Domestic Cat. Carrol C. Platz Jr. & Stephen W.J. Seager. ■



It is evident that the international scientific congresses in fur animal production increase the results !

Some Additional Data to Lars Elofon's Study on Matings - Later in the Season

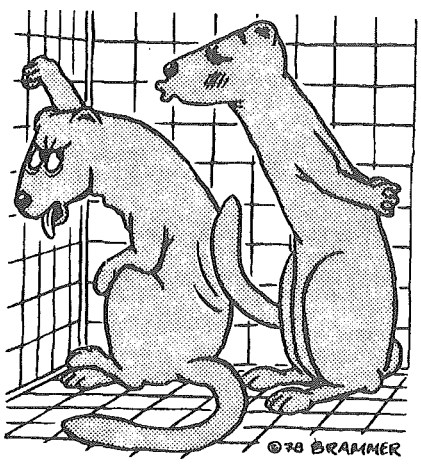
Last year Lars Elofson presented a paper on an analysis of the results of matings later in the season. He pointed out that it could be advantageous to benefit from this with older females. Our practical ranch experience directed the same way.

For that reason we mated, in 1983, 2,000 females two years and older, later in March. We divided those females equally over three starting dates and six sections. Each section had, for each day, approximately 110 females. The results of one of the sections are shown in the table.

March	14 - 15	15 - 16	16 - 17
Females kept back	109	109	109
Total Kits	662	600	566
Avg. Per Female	6.07	5.50	5.19
Females Whelped	104	98	91
Avg. Per Female Whelped	6.36	6.12	6.21

It appears that for our latitude, which is the 42nd parallel, the 16th of March is going to be late. Next year we will move the dates up by one or two days, depending on the color phase.

Anthony A. Rietveld



I am sorry,
we are starting too late!

INCREASING THE REPRODUCTION RESULTS IN MINK DURING SPERM CONTROL AND TEST OF TESTOSTERONE LEVEL. A STEREOLOGICAL ANALYSIS OF TESTIS.

(Förbättring av minkens valpresultat medelst spermaundersökning och testosteronhaltbestämning. En stereologisk analyse av testikelvävnaden).

Christer Sundqvist, The Academy of Åbo, Institution of Biology, Åbo, Finland.

About 10 percent of the mink males are sterile, and it is relevant to avoid them from breeding. Spermacontrol has been the way to find sterile males during the sixties and the seventies, but the results of this test was not satisfactory.

In the actual investigation spermacontrol during 1978-1982 in a minkfarm gave satisfactory results. The breeding results increased with 0.2-0.4 kits per mated female, and the percent of empty females decreased between 2 and 10 percent based on the use of the spermatest method. This relative success was possibly due to the technical facilities used, the accuracy and the experience of the persons doing the work.

The sterological analysis of testis from sterile and fertile males underlined the usefulness of the actual spermatest. It was possible to remove the "poor" males from breeding, because the testis of sterile males showed clearly damage in the spermie producing epithelium. The difference between fertile and sterile males was statistical significant ($P < 0.01$).

The relationship between testosteronlevel and spermquality was examined in each male. Correlation between the testosteronelevel and the number of kits was not found as a result of the matings ($r < 0.2$. This result was to some degree disappointing because statistical significant differences in the testosteronlevel ($P < 0.01$) was found between "good" males (Finnish) and "poorer" males (American). This poor agreement is possible due to incorrect time for the testosteron test.

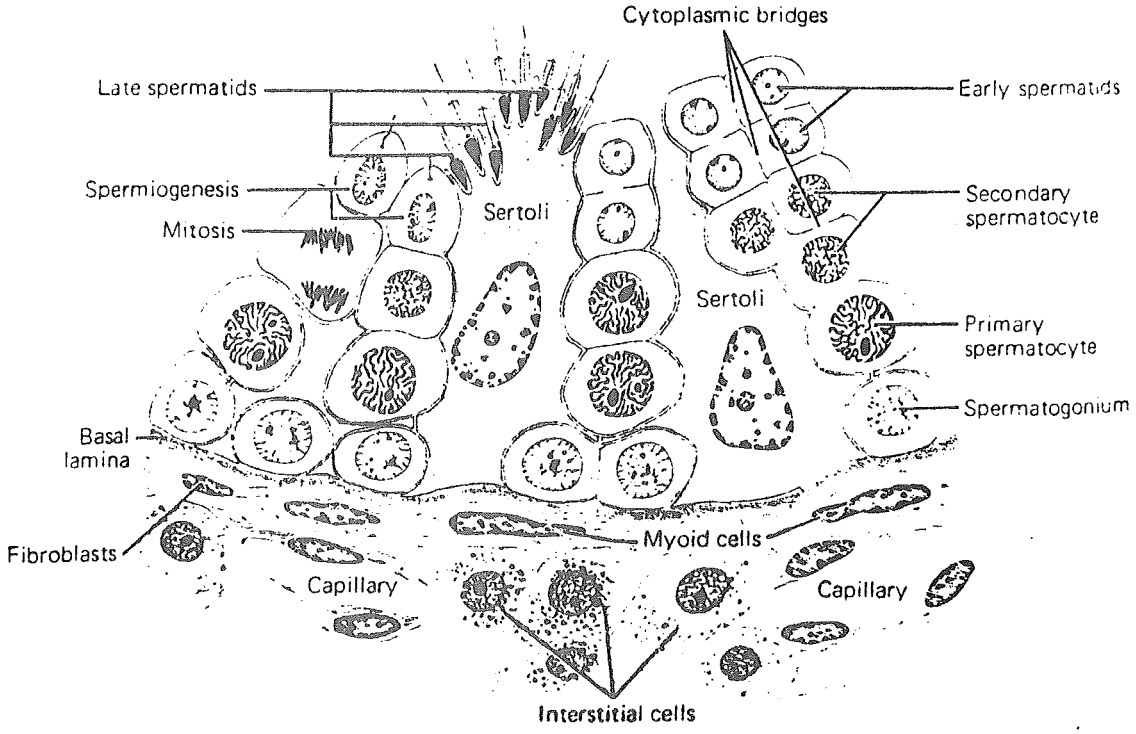


Fig. 6. En översiktsbild av de celltyper som kan ses i de sädesproducerande gångarna. Enligt JUNQUEIRA(1980).

Pälsdjursstudier nr. 8, Helves Stiftelse, Vanda, 1982.
ISSN 0358-3759. Pro gradu thesis, 64 pages, 4 suppl., 70 references, 17 tables, 78 figs.
In SWED.

Author's summary
translated by G. Jørgensen.

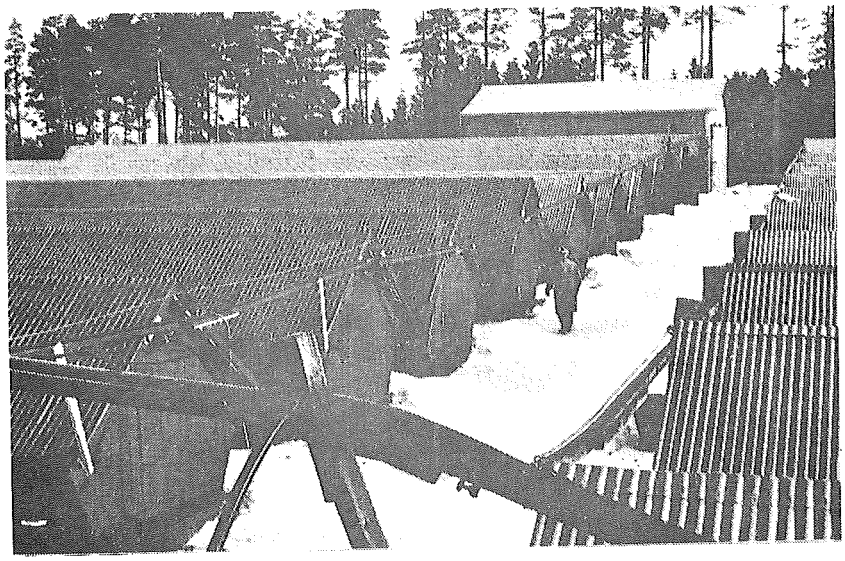


Fig. 8. Södersundvik Mink AB:s farm i Västanfjärd.

(Foto : C. Sundqvist)

GESTATION LENGTH AND EFFICIENT PRODUCTION IN MINK.

(Duracion de la Gestacion y Produccion Eficiente en el Vison).

Rafael Garcia-Mata, Profesor de la cátedra de Producción de Animales Peliteros, Facultad de Ciencias Agrarias. Universidad Católica, Argentina.

The results are presented of the studies made in Argentina with the intention to stablish a better mating program to obtain higher results in the breeding of mink. The working hypothesis are: 1) the size of litter is larger when the length of pregnancy is shorter, and 2) the physiologic "normal" minimum figure for the length of gestation is 40 days. So, the goal of the work is to obtain a mean length of gestation nearest to 40 days, with the least variability in the spread of gestation periods. Artificial light is used - increasing the amount of light later in the breeding cycle - in order to anticipate the end of the estrous period and reduce the time of the delayed implantation of the blastocysts. After eight years of workthe results show a remarkable improvement made on size of litter and lower number of non-breeding females. In relation with the progress made in reducing the mean length of gestation and the spread around the mean.

Rev. de Ciencias Agrarias. (Buenos Aires, Facutad de Ciencias Agrarias, Universidad Catolica, Argentina) Mar. 1980, V.1 (1) 13-18.
3 tables, 1 fig., 6 references. Author's summary.
In SPAN. Summary in ENGL.

FEEDBACK OF GONADOTROPIC HORMONES.

ФЕНОМЕН «ОБРАТНОГО ТОЛЧКА» ГОНАДОТРОПНЫХ ГОРМОНОВ

V.G. Bernatskii, USSR.

88 mink female were each injected with 50 IU PMS at the beginning of the mating season. 88 control female, littermates of the experimental female, were not treated; 88 unrelated control female were also untreated.

For the 3 groups resp., litter size averaged 6.45, 5.90 and 5.43, and kit production per housed female 5.51, 4.64 and 4.41, the differences between treated female and controls being significant. For 24 female each injected with 10 IU HCG at the beginning of the mating season and for 24 control female, littermates of the experimental female, the CR was 96.0 and 95.8 percent resp., abortion rate 0 and 8.0 percent, whelping rate 96.0 and 87.5 percent, litter size 6.33 and 5.29, the number of liveborn kits per litter 5.40 and 4.46, and the number of kits weaned per female whelping 5.38 and 3.92, the last difference being highly significant.

Nauchnye Trudy. Nauchno-Issledovatel'skii Institut Pushnogo Zverovodstva i Krolikovodstva, 21, 98-105, 1980.

5 references, 3 tables. CAB-abstract.

In RUSS.

GROWTH AND SEXUAL ACTIVITY OF MINK MALES WITH DIFFERENT BIRTH WEIGHTS.

РОСТ И ПОЛОВАЯ АКТИВНОСТЬ САМЦОВ НОРОК С РАЗНОЙ МАССОЙ ТЕЛА ПРИ РОЖДЕНИИ

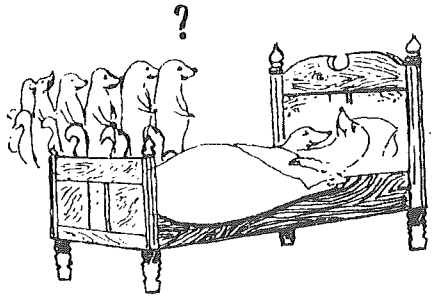
T.M. Demina, USSR.

Data were obtained on 180 male. For male weighing more than or equal to 12, 10.0-11.9 or less than or equal to 9.9 g at birth body length at 6 months of age averaged 48.0, 46.6 and 46.3 cm resp., and testis weight 0.60, 0.58 and 0.45 g body weight at licensing averaged 2.08, 2.11 and 2.04 kg, the number of female mated in the 1st mating season 4.9, 4.6 and 3.9, and the number of copulations 14.1, 13.0 and 10.6

Nauchnye Trudy, Nauchno-Issledovatel'skii Institut Pushnogo Zverovodstva i Krolokovodstva, 21, 121-126, 1980.

7 references, 4 tables. CAB-abstract.

In RUSS.



It looks as if he is born with the rigth weight.

SOME PROBLEMS IN BREEDING OF DEMI-BUFF MINK.

НЕКОТОРЫЕ ВОПРОСЫ РАЗВЕДЕНИЯ НОРОК ДЕМИ-БАФФ.Г.Б.

G.B. Mamaeva, E.I. Ryminskaya, A.G. Zaitsev, L.A. Burdel', USSR.

Pregnancy duration was short (35-50 days) in demi-buff mink. The best reproductive performance was obtained when the mating season started on 7 March. The yield of kits per female was lower than with standard mink, due to a high incidence of stillbirths.

Kirov, USSR. Obogashch. Fauny i Raxvedenie Okhot Zhivotnykh. Materialy k Vses. Nauch.-Proizv. Konf. Posvyashch. 100-Letiyu so Dnya Rozhd. P.A. Manteifelya, 19-21 Maya, 1982. Page 185 (1982).

CAB-abstract.

In RUSS.

THE EFFECT OF VOCALISATION DURING THE BREEDING SEASON ON REPRODUCTIVE ABILITY OF STANDARD MINK.

N.N. Tyutyunik, V.A. Berestov, G.G. Lavrinenko, Petrozavodsk, USSR.

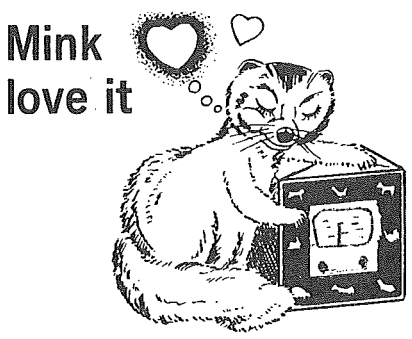
A recording of mating sounds was played twice daily for 20-25 min at a level of 60-80 decibels to mink for 20-25 days before the start of the mating season. Whelping rate was similar in these mink and in others not exposed to the sounds, but litter size was higher by 0.34 in the former than in the latter.

Biol. I Patol. Push. Zverei. Tez. Dokl. K 3-I, Vses. Nauch. Konf. 164-165, 1981.

1 table.

CAB-abstract.

In RUSS.



CHARACTERIZATION OF PROLACTIN BINDING SITES IN THE UTERUS OF THE MINK.

J. Rose, J. Adair, J.E. Oldfield, Dept. of Animal Science, Oregon State University, Corvallis, OR 97331, USA.

The mink is a seasonal breeder whose reproductive cycle is characterized by a period of delayed implantation. It has been suggested that prolactin (Prl) is part of the luteotrophic complex in mink and through stimulation of progesterone secretion initiates implantation. Exogenous Prl has been shown to shorten the period of delayed implantation, but treatment with progesterone has not been as effective. It is possible that Prl acts at an extraovarian site to regulate implantation in the mink. The present study was conducted to determine if specific binding sites for Prl are present in the uterus of the mink. Uteri of anestrous mink were pooled for analysis, homogenized and subjected to differential centrifugation into three particulate fractions; 1,500 x g, 15,000 x g and 100,000 x g. Binding was measured using ^{125}I-oPrl and utilizing 200 to 400 µg of tissue protein from the 100,000 x g fraction. Time and temperature for optimal binding was 18 hours at 25° C. Scatchard plot analysis revealed high affinity binding sites for Prl with a K_d of 7.4×10^{-11} M. Prolactin binding sites were detected in both the uterus and kidney of mink but not in skeletal muscle, spleen, diaphragm or lung. An effort was also made to determine the effects of increased Prl levels in mink on uterine receptors for this hormone. Twelve adult female mink were mated and assigned randomly to two groups. Animals (N=6) were given a subcutaneous injection of 0.70 mg pimozide in corn oil on days 2, 5 and 8 after mating. Control animals (N=6) were similarly injected with vehicle only. All animals were sacrificed on day 11 post-mating and pregnancy was verified by the presence of unimplanted blastocysts. Prolactin binding determination were performed on individual uteri. Treatment with pimozide failed to affect the concentration of uterine Prl receptors ($P > 0.05$).

14th Annual Meeting of the Society for the Study of Reproduction, Corvallis, Oregon, USA. 10-13 Aug. 1981.
Biol. Reprod. 24 (Suppl. 1) 1981, 78 A/1981.

Authors' abstract.

THE EFFECT OF ARTIFICIAL INSEMINATION ON THE REPRODUCTION OF SILVER-BLACK FOXES.

ВЛИЯНИЕ НЕКОТОРЫХ ПРИЕМОВ ИСКУССТВЕННОГО ОСЕМЕНЕНИЯ НА РЕЗУЛЬТАТЫ ВОСПРОИЗВОДСТВА СЕРЕБРИСТО-ЧЕРНЫХ ЛИСИЦ

E.P. Bautina, USSR.

For 18 female that had been inseminated with diluted semen, 17 female that had been inseminated with undiluted semen, and 17 female that had been naturally mated, the CR was 94.4, 88.2 and 88.2 percent resp., whelping rate 82.3, 80.0 and 86.6 percent, litter size 4.28, 5.25 and 6.38 and the number of kits per inseminated female 3.33, 3.70 and 4.88.

Nauchnye Trudy. Nauchno-Issledovatel'skii Institut Pushnogo Zverovodstva i Krolikovodstva, 21, 118-120, 180.

2 tables. CAB-abstract.

In RUSS.

OBTAINING TWO LITTERS IN A YEAR FROM VEILED ARCTIC FOXES.

ПОЛУЧЕНИЕ ВТОРОГО ПРИПЛОДА В ГОД ОТ ВУАЛЕВОГО ПЕСЦА

G.A. Kuznetsov, G.P. Kazakova, USSR.

Groups of male (4-6 young male and 2-6 old male per group) were subjected to light regimes as follows: (1) 5-h light daily from 7 July to 25 Sep., and 16 h light daily from 26 Sep. to the end of the mating season; (2) 5-h light daily from 20 July to 25 Sep., and then as group 1; (3) 5-h light daily from 7 to 19 July, alternating 21/2-h light and 91/2-h darkness from 20 July to 5 Sep., 3-h light daily from 6 Sep. to 22 Oct., and 16-h light daily from 23 oct. to the end of the mating season. Groups of female (16 per group) were allowed either 5-h light daily from 7 July to 4 Sep. and 16-h light daily from 5 Sep. to whelping (group 1), or 5-h light daily from 7 July to 25 Sep. and 16-h daily from 26 Sep. to whelping (group 2). For the 2 groups of female, the mating rate was 74 and 50 percent resp., whelping rate (of female mated) was 66 and 60 percent, litter size averaged 12.3 and 10.7, and the number of young weaned per female whelping averaged 6.2 and 3.2 ($P < 0.01$). For the

3 groups of male, the 1st mating was recorded on 13 Oct., 15 Oct. and 27 Nov. resp., the last mating on 17 Nov., 4 Dec. and 15 Dec., the percentage of sexually active male 25, 33 and 50, and the date of first production of semen of standard quality 17 Nov., 15 Oct. and 8 Dec.

Nauchnye Trudy. Nauchno-Issledovatel'skii Institut Pushnogo Zverovodstva i Krolokovodstva: (No. 20) 5-1, 1979.
3 references, 3 tables. CAB-abstract.
In RUSS.

REPRODUCTIVE ABILITY OF SHORT- AND NORMAL-COATED VEILED FOXES IN RELATION TO MATING AT DIFFERENT STAGES OF THE VAGINAL HISTOLOGICAL CYCLE.

ВОСПРОИЗВОДИТЕЛЬНАЯ СПОСОБНОСТЬ КОРОТКОВОЛОСЫХ И НОРМАЛЬНОВОЛОСЫХ САМОК ВУАЛЕВЫХ ПЕСЦОВ ПРИ СПАРИВАНИИ НА РАЗНЫХ СТАДИЯХ ВЛАГАЛИЩНОГО МАЗКА.

S.D. Balash, USSR.

Vaginal smears were examined, and the cytological picture was classified into 4 stages. The yield of cubs was highest for matings during the 3rd stage in young female. In old female, the best results were obtained for matings during the 1st stage.

Kirov, USSR.
Obogashch. Fauny i Razvedenie Okhot Zhivotnych. Materialy k Vses. Nauch.-Proizv. Konf. Posvyashch. 100-Letiyu so Dnya Rozhd. Prof. P.A. Manteifelya, 19-21 Maya, 1982. Part of collective document, p 167.
In RUSS. CAB-abstract.

REPRODUCTIVE ABILITY OF SHORT-HAIRED FOXES IN RELATION TO AGE AND TYPE OF MATING.

ВОСПРОИЗВОДИТЕЛЬНЫЕ СПОСОБНОСТИ КОРОТКОВОЛОСЫХ ПЕСЦОВ В ЗАВИСИМОСТИ ОТ ИХ ВОЗРАСТА И РАЗНЫХ ТИПОВ СПАРИВАНИЯ

M.F. Balash, S.L. Balash, USSR.

The reproductive performance of short-haired foxes was shown to be similar

to that of foxes with normal hair length. It was related to age of parents, mating frequency and interval between matings.

Perm, USSR. Vopr. Okhotoved. Part of collective document, p. 3-7, 1982.
4 tables. CAB-abstract.
In RUSS.

OVARIAN HISTOLOGY OF SABLES DURING THE MATING SEASON.

ГИСТОЛОГИЧЕСКОЕ ИССЛЕДОВАНИЕ ЯИЧНИКОВ СОБОЛЯ В ПЕРИОД СПАРИВАНИЙ

N.G. Nosova, USSR.

Laparotomy was carried out 36-60, 72, 77-82, 84-96, 140 and 156-208 h after mating in 125 female that had been culled for low fur quality. At the 6 times resp., the percentage of female that had ovulated was 0, 0, 21.3, 32.5, 34.8 and 33.3. Corpora lutea were found by day 6 after mating. Females mated repeatedly over a short period ovulated after the last coitus.

Nauchnye trudy. Nauchno-Issledovatel'skii Institut Pushnogo Zverovodstva i Krolikovodstva, 21, 110-117, 1980.
3 tables, 10 figs., 3 references. CAB-abstract.
In RUSS.

FERTILITY OF SABLES.

B.D. Klyatis, USSR. О плодовитости соболей.

Sexual maturity occurred late in domesticated sables, and their fertility was low. Age had an effect on reproductive performance.

Kirov, USSR. Obogashch. Fauny i Razvedenie Okhot Zhivotnykh. Materialy k Vses. Nauch.-Proizv. Konf. Posvyashch. 100-Letiyu so Dnya Rozhd. Prof. P.A. Manteifelya, 19-21 Maya, 1982. Part of Collective document, p. 178,1982.
In RUSS. CAB-abstract.

THE REPRODUCTION OF THREE- AND FOUR-YEAR-OLD FEMALE SABLES GIVEN DIETS WITH REDUCED LEVELS OF PROTEIN.

РАЗМНОЖЕНИЕ ТРЕХ-, ЧЕТЫРЕХЛЕТНИХ САМОК СОБОЛЕЙ ПРИ ПОНИЖЕННЫХ УРОВНЯХ ПРОТЕИНА В РАЦИОНАХ

V.F. Kladovshchikov, B.A. Kulichkov, I.M. Mironova, USSR.

For 363, 30 and 30 female given diets containing 10.5, 9.2 and 8.4 g digestible protein per 100 kcal feed resp., the percentage mated was 93.1, 100 and 96.7, whelping rate was 62.1, 66.7 and 62.1 percent, litter size averaged 3.0, 3.5 and 3.1, and survival of the young to weaning was 89.6, 98.5 and 88.9 percent. The differences between groups in the numbers of young registered per female whelping were not significant. Similar results were obtained over 2 following years.

Nauchnye Trudy. Nauchno-Issledovatel'skii Institut Pushnogo Zverovodstva i Krolokovodstva: (no. 20): 96-96, 1979.

3 references, 3 tables. CAB-abstract.

In RUSS.

NUTRITION

EFFECT OF VITAMINS ON BIOCHEMICAL VALUES OF BLOOD IN GROWTH-RETARDED MINK.

ВЛИЯНИЕ СЕЛЕНА И ВИТАМИНОВ НА БИОХИМИЧЕСКИЕ ПОКАЗАТЕЛИ КРОВИ НОРОК КАРЛИКОВ

D.N. Perel'dik, N.E. Kulikov, V.V. Gubskii, USSR.

In mink with growth retardation, there was an increase in the activity of creatine phosphokinase, alpha-hydroxybutyrate dehydrogenase, lactate dehydrogenase and aspartate aminotransferase in blood, compared to healthy mink; the increase was considered typical for different forms of myopathy, including white muscle disease. Sodium selenite 0.05 mg/day for 10 days and vitamin E 10 mg/day for 30 days brought to normal the activity of those enzymes and also that of alkaline phosphatase in serum. Supplementary vitamin B-6, B-12 and folic acid did not increase the effectiveness of action of sodium selenite and vitamin E.

Nauchnye Trudy Nauchno-Issledovatel'skogo Instituta Pushnogo Zverovodstva i Krolikovodstva, 23, 110-118, 1980.

4 tables, 7 references. CAB-abstract.

In RUSS.

EFFECT OF TRACE ELEMENT SUPPLEMENTS ON GROWTH, DEVELOPMENT AND FUR QUALITY OF YOUNG SABLES.

ВЛИЯНИЕ ПОДКОРМКИ МИКРОЭЛЕМЕНТАМИ НА РОСТ, РАЗВИТИЕ МОЛОДНЯКА СОБОЛЕЙ И КАЧЕСТВО ЕГО ШКУРОК *

A.V. Shvetsov, Moscow, USSR.

Addition of $FeSO_4$, $CuSO_4$, $ZnSO_4$, $CoCl_2$, $MnSO_4$ and KI to the diet eaten by young sables increassed the body weights of the males and females by 8.4 and 5.7 percent, reduced the defects in pelts by 7.4 and 25 percent and increased pelt value by 0.83 and 3.7 percent, resp.

Moscow, USSR. Povyshenie Produktivnosti Zverovodstva i Okhotnich'e-Promyslovoi Fauny, Part of Collective document, 10-15, 1980.

3 tables. CAB-abstract.

In RUSS.

FEEDING OF ADULT FEMALE SABLES ON DIETS WITH INCREASED AMOUNTS OF LOW-PROTEIN KOREAN COD.

КОРМЛЕНИЕ ВЗРОСЛЫХ САМОК СОБОЛЕЙ ПО РАЦИОНАМ С ПОВЫШЕННЫМ СОДЕРЖАНИЕМ МИНТАЯ, ПОНИЖЕННЫМ УРОВНЯМ ПРОТЕИНА

V.F. Kladovshchikov, B.A. Kulichkov, Yu M. Dokukin, I.M. Mironova, USSR.

Female pedigree sables were fed from infancy for 5 to 6 years on diets eith 20 to 30 percent Korean cod and containing digestible protein 9.5 g/100 cal, or on diets with mashed cereal grains supplemented with fat and containing digestible protein 8.5 g/100 kcal. The control group was fed on traditional diets. The test diets did not reduce the production of young. Adult sables 5 years old quickly adapted themselves to the diet with a reduced level of digestible protein. During the first year on that diet, and in subsequent years, they produced an adequate number of young, 2.57 to 3.15 young per dam. Transfer of sables 5 years old abruptly to a diet with 25 to 30 percent Korean cod without supplementary iron caused, during 2 years, a decrease in the production of young by 0.5 to 0.6 young/dam. On the third year of feeding on such a diet, but with supplements of ferroanaemin, during pregnancy and lactation at 10 to 15 mg/day, the dams produced on average 3.22 young each.

Nauchnye Trudy Nauchno-Issledovatel'skogo Instituta Pushnogo Zverovodstva i Krolikovodstva, 23, 129-136, 1980.
3 tables, 2 references. CAB-abstract.
in RUSS.

TOXICOLOGY OF PCBs IN MINK AND FERRETS.

Robert R. Ringer, Dept. of Animal Science, Ctr. for Environmental Toxicol., Michigan State University, East Lansing, Michigan 48824-1206, USA.

Mink are among the more sensitive species or are the most sensitive mammalian species to PCB toxicity. Dietary administration of Aroclor 1254 at 2 mg/kg adversely affects reproduction. Meat containing PCB contamination when fed to this carnivore affects reproduction at even lower levels.

PCBs are embryotoxic to the developing embryo. Spermatogenesis, oogenesis, and implantation are unaffected.

Placental transfer of PCB occurs but mammary transfer from the lactating dam is a more pronounced means of offspring contamination.

PCBs: Human and Environmental Hazards, Chapter 17. Edited by: Frank M. D'Itri and Michael A. Kamrin. Publ. by: Butterworth Publishers, Woburn, MA 01801. 1983, 443 pp.

8 tables, 20 references, Author's summary.

PERINATAL HEXACHLOROBENZENE TOXICITY IN THE MINK.

Glenn F. Rush, Jacqueline H. Smith, Keizo Maita, Michael Bleavins, Richard J. Aulerich, Robert K. Ringer, Jerry B. Hook, Dept. of Pharmacology, Toxicology, and Animal Science, Center for Environmental Toxicology, Michigan State University, East Lansing, Michigan 48824, USA.

Adult female standard dark mink were exposed to hexachlorobenzene (HCB) at concentrations of 0, 1, and 5 ppm in the feed and bred with males on the same treatments. Female offspring were allowed to mature to 16-17 weeks and killed. At 16-17 weeks of age, HCB had no effect on body weights or liver weights. Hepatic cytochrome P-450 and ethoxyresorufin-O-deethylase were significantly increased 2.0- and 1.5-fold, respectively, in the 5-ppm treatment group. Electron microscopy failed to reveal proliferation of the smooth endoplasmic reticulum. No hepatic damage was observed. No changes in in vitro renal function, measured as accumulation of para-aminohippurate and tetraethylammonium by renal cortical slices, were detected in any treatment group. Histological examination of renal slices did not reveal any alterations in morphology. Fat was the predominate site of HCB disposition; samples from the 5-ppm treatment group contained 626.10 - 12.01 ng HCB/g tissue. Whereas perinatal HCB administration has profound effects on the survival of offspring born to exposed mink, only induction of hepatic mixed-function oxidases was observed in the surviving kits without any observable frank hepatotoxicity.

Environmental Research, 31, 116-124, 1983.

Authors' summary.

PCB METABOLITES IN THE URINE OF MINK (MUSTELA VISON L.) FOLLOWING EXPOSURE TO AROCLOR^{R} 1242.

Robert K. Ringer, Richard J. Aulerich, Dept. of Animal Science, Michigan State University, East Lansing, MI, USA.

PCB metabolites in the urine of mink exposed to Aroclor 1242 were studied in male and female dark mink. Gas-chromatographic and mass-spectral analysis was used to identify the metabolites. A mono- and a dihydroxy-dichloribiphenyl and a monohydroxytrichlorobiphenyl were established.

Bulgarian Academy of Sciences,Ecology 11, Sofia, January 1983.

Authors' abstract.

FISH SILAGE: THE PROTEIN SOLUTION.

K.A. Winter, L.A.W. Feltham, Research Station, P.O. Box 1210, Charlottetown, P.E.I., C1A 7M8, Canada.

Fish silage is a source of high quality protein plus minerals for animal feeding. It is easily made and in cases where it is produced in relatively small quantities, no special equipment is needed.

The nutrient content of fish silage is approximately the same as that of fish meal and it is a versatile feedstuff which can be used by a number of animal species. Probably its greatest use is in the feeding of fur-bearing animals, especially mink. It is also used as a feed supplement for farm livestock such as pigs and cattle.

Fish silage, or liquid fish protein, is the product obtained when fish processing wastes are ground and acid is added to prevent spoilage. Enzymes present in the raw material break down the tissue protein and liquefy it. The liquefied product can then be used in animal feeds.

Fish silage is easily made and provides the most economical method for

storage of fish wastes. In addition, a fish silage production setup is easily scaled for any size of operation and is environmentally sound.

Agriculture Canada, Research Branch. Contribution 1982-6E. 16 pages. Produced by Research Program Service.

2 tables, 2 figs., 10 references. Authors summary.

In ENGL. Summary in FREN.

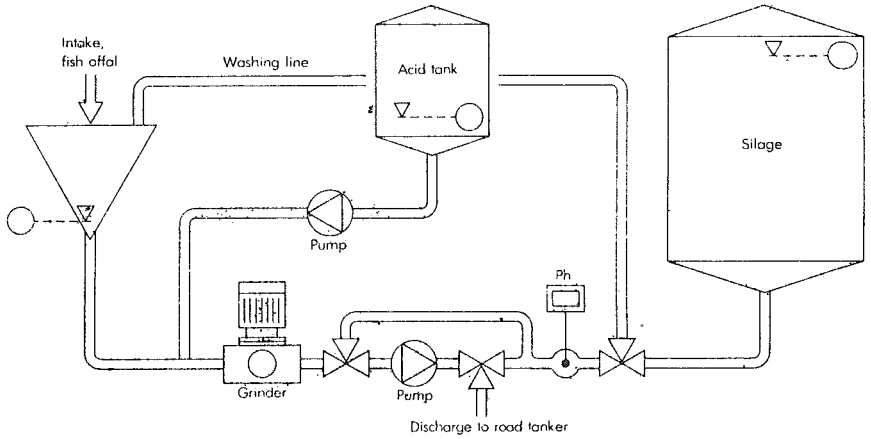
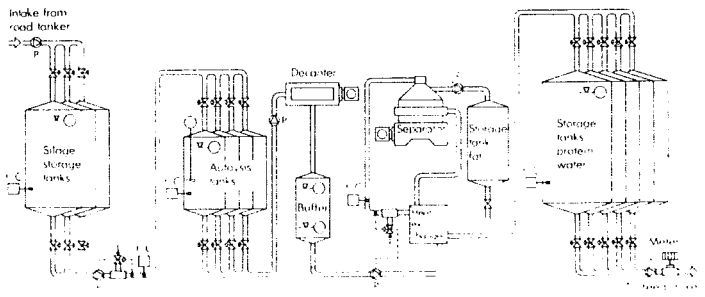


Fig. 1. Schematic diagram of ensiling plant.



VETERINARY

ALEUTIAN DISEASE OF MINKS AS AN EXPERIMENTAL MODEL OF SYSTEMIC LUPUS ERYTHEMATOSUS.

АЛЕУТСКАЯ БОЛЕЗНЬ НОРОК КАК ОДНА ИЗ ЭКСПЕРИМЕНТАЛЬНЫХ МОДЕЛЕЙ СИСТЕМНОЙ КРАСНОЙ ВОЛЧАНКИ

V.D. Akhnazarova, E.G. Vasilyeva, USSR.

Aleutian disease (AD) of minks can serve as an experimental model of systemic lupus erythematosus (SLE). The results of morphological study of organs and tissues from 63 minks who fell ill spontaneously or were infected with the excreta or tissue filtrates of the diseased animals are described. The most pronounced changes were observed in the kidneys, their character resembling those in lupus nephritis. AD of mink resembled SLE also due to the presence of the signs of the nuclear pathology. However, along with similar symptoms AD and SLE showed distinct differences, such as absence of signs of disorganization in the connective tissue and of the heart lesions in the experimental animals.

VOPR. REVM. 21/1 (46-50) 1981.
1 table, 6 figs., 16 references. Authors' summary.
In RUSS, summary in ENGL.

CHARACTERIZATION OF DEOXYRIBONUCLEIC ACID FROM CELLS INFECTED WITH ALEUTIAN DISEASE VIRUS.

Edwin C. Hahn, Luciano Ramos, Alan J. Kenyon, Dept. of Vet. Pathobiol., College of Veterinary Medicine, University of Illinois, Urbana, IL 61801, USA.

Viral DNA was extracted from Crandell feline kidney (CRFK) celles infected with Aleutian disease virus (ADV) and labeled with (^{3}H)thymidine. The

sedimentation coefficient in alkaline sucrose gradients was 16S corresponding to a molecular weight of 1.5×10^6. The buoyant densities of DNA from infected and control celles were determined by isopyknic sesimentation in CsCl and NaI gradients. Two additional peaks of (^{3}H)DNA were found in infected cells, but not in control cell extracts. Fractionation of this DNA on hydroxylapatite indicated that the nes peaks represented a single-stranded component, density 1.728 g/cm^3, and a double-stranded component, presumed to be a viral replicative intermediate, density 1.718 g/cm^3. The target antigen formation in CRFK cells was measured by γ-irradiation of ADV and assayed for focus formation. The calculated size of ADV based on these measurements was 1.1×10^6. The H-1 parvovirus also was shown to have a size of 1.5×10^6 daltons for both antigen and plaque formation. The data indicated similarities existed between ADV and other autonomously replicating parvoviruses in most properties, except that less-than-unit length genome of ADV may be transcribed.

Am. J. Vet. Res., Vol. 44, no. 7, 1177-1181.
1 table, 6 figs., 30 references. Authors' summary.

MYCOPLASMA MUSTELAE, A NEW SPECIES FROM MINK.

M.M. Salih, N.F. Friis, S.N. Arseculeratne, E.A. Freundt, C. Christiansen, FAO, Worls Health Organization Collaborating Centre for Animal Mycoplasmas, Inst. of Medical Microbiology, Univ. of Aarhus, Aarhus, Denmark.

Five rapidly growing, glucose-fermenting Mycoplasma strains were isolated from the lungs of mink kits. Biochemical and serological studies revealed that these isolates were different from alle of the currently accepted Mycoplasma species and serogroups. These strains appear to constitute a new species, for which we propose the name Mycoplasma mustelae. The type strain of M. mustelae is train MX9, and this strain has been deposited in the Food and Agriculture Organization/World Health Organization Collaborating Centre for Animal Mycoplasmas, Institute of Medical Microbiology, University of Aarhus, Aarhus, Denmark, as strain AMRC-C 1486, in the

American Type Culture Collection, Rockville, Md., as strain ATCC 35214, an in the National Collection of Type Cultures, London, England, as strain NCTC 10193.

Addendum in proof.

After this paper was accepted for publication, two additional isolates (S2A and L2A), recovered from the trachea of a mink presenting distemper-like symptoms, were identified as M. mustelae. Both isolates showed double cross-reactions, by GI and IMF, with each other and with strain MX9^T, and their biochemical characteristics were also identical with those of strain MX9^T. Strains S2A and L2A were submitted for identification by T. Yagihashi, Nippon Institute for Biological Science, Tokyo, Japan. M. cricetuli was isolated by A.C. Hill from the conjunctivas of Chinese hamsters, a closely related host, and described (Int. J. Syst. Bacteriol. 33: 113-117, 1983) after acceptance of this paper.

Internat. Journ. of Systematic Bacteriology, Vol. 33, no.3, 1982, 476-479.
16 references. Authors summary and addendum.

CHANGES IN THE FACTORS OF NATURAL RESISTANCE IN ALOPEX LAGOPUS WITH TOXASCARIS LEONINA INFECTION.

ДИНАМИКА ФАКТОРОВ ЕСТЕСТВЕННОЙ РЕЗИСТЕНТНОСТИ ПРИ ТОКСАСКАРИДОЗЕ У ПЕСЦОВ

V.A. Kulikov, Petrozavodsk, USSR.

In a lagopus infected with Toxascaris leonina, an increase in the activity of beta-lysins (in comparison to uninfected controls) was observed during the summer, returning to normal in the autumn. Considerable changes in the activity of complement was observed in adult females but not in the cubs.

Petrozavodsk, USSR. Kliniko-Biokhimicheskie Aspekty Normy i Patologii Pushnykh Zverei. Part of collective document. 150-157, 1979.
11 references. CAB-abstract.

BAYLISASCARIS PROCYONIS AND EIMERIAN INFECTIONS IN RACCOONS.

J.P. Dubey, Animal Parasitology Institute, US Dep. of Agriculture, Beltsville, MD 20705, USA.

Twenty-eight raccoons from Columbus, Ohio, were surveyed for intestinal parasites. Baylisascaris procyonis was found in 7, trichurid eggs in 2, capillarid eggs in 8, trichostrongyloid eggs in 9, and Eimeria procyonis oocysts in 23. Meronts, gamonts and oocysts of E procyonis were found in epithelial cells at the tips of the villi of small intestine. Meronts were 7 x 5.5 µm and contained 4 to 10 merozoites which were 5 x 1.5 µm. Male gamonts were 15.5 x 11.7 µm and contained numerous gametes. Female gamonts were 13.7 x 11.3 µm. Oocysts were 15.5 x 11.8 µm and had the outer rough wall and the micropyle.

Baylisascaris procyonis-embryonated eggs were fed to 2 parasite-free cats, a Toxocara-free dog, a fox, a sheep, a goat, and numerous white laboratory mice. Neither lesions nor larvae were found in nonmurine hosts each fed 5,000 infective eggs; 16 or more eggs of the same inoculum were fatal to each mouse.

JAVMA, Vol. 181, no. 11, 1292-1294.
7 references, 8 figs. Author's summary.

RACCOONS ARE NOT SUSCEPTIBLE TO CANINE PARVOVIRUS.

Max J.G. Appel, Colin R. Parrish, James A. Baker Institute for Animal Health, Dept. of Microbiology, New York State College of Veterinary Medicine, Cornell University, Ithaca, NY 14853, USA.

Five raccoons (Procyon lotor) (6 months old) were inoculated oronasally with 10^5 $TCID_{50}$ of virulent canine parvovirus. None became ill, and they were still susceptible to challenge with a raccoon enteritis parvovirus, which was found to be antigenically more closely related to feline panleukopenia virus than to canine parvovirus.

Jour. of Amer. Vet. Med. Ass, Vol. 181, 5, 489, 1982.
6 references, 1 tables. CAB-abstract.

TOXOPLASMOSIS IN FUR-BEARING ANIMALS.

ТОКСОПЛАЗМОЗ У ПУШНЫХ ЗВЕРЕЙ

V.D. Mel'nikov, USSR.

The sera of 402 minks and 397 Arctic Foxes from 7 farms in Kareliya, USR, were tested for toxoplasmosis. 7.8 percent of the foxes were positive in the fluorescence inhibition test. The CFT gave 16.1 percent positive reactions. In minks, the CFT and the fat with complement fixation gave 8.4 percent and 19.9 percent positive reactions, respectively.

Petrozavodsk, USSR. Kliniko-Biochimicheskie Aspekty Normy i Patologii Pushnykh Zverei. Part of collective document, 126-121, 1979.

17 references, 2 tables. CAB-abstract.

In RUSS.

INTRA-SPECIES RELATIONSHIPS BETWEEN HELMINTHS OF CAGED ALOPEX LAGOPUS.

МЕЖВИДОВЫЕ ВЗАИМООТНОШЕНИЯ ГЕЛЬМИНТОВ У ПЕСЦОВ КЛЕТОЧНОГО СОДЕРЖАНИЯ.

L.V. Anikieva, USSR.

Alopex lagopus with natural toxascaris leonina infection were experimentally infected with diphyllobothrium latum plerocercoids. Antagonism was demonstrated by a reduction in the prevalence and intensity of the natural infection and by decreased fertility and duration of oviposition of T. Leonina.

Petrozavodsk, USSR. Kliniko-Biokhimicheskie Aspekty Normy i Patologii Pushnykh Zverei. Part of collective document, 146-150, 1979.

7 references, 2 tables. CAB-abstract.

In RUSS.

OCCURRENCE OF ECTOPARASITIC SIPHONAPTERA ON FUR BEARING ANIMALS. (CTENOCEPHALIDES CANIS ON ALOPEX LAGOPUS).

Výskyt ektoparazitov (Siphonaptera) u mäsožravých kožušinových zvierat

M. Jurik, Vysoka Skola Zemedelska v Brne, Czechoslovakia.

The only species living on the Arctic fox kept on farms in Czechoslovakia was identified as Ctenocephalides canis. Ct. canis hibernates on foxes as an active imago and develops in the stuffs under cages. Its excessive propagation occurring at the beginning of August, i.e. in the 3rd or 4th generations during a year according to seasonal conditions (temperature), can be prevented by removing the suffs from cages till the end of July at latest. Chemical treatment is recommended to be made in the 3rd decade of July and replicated in the 1st decade of August.

Informacni Zpravodaj, Vysoka Skola Zemedelska v Brne, 13 (1/3) 116, 1980.
Only summary received - in CZEC, ENGL, RUSS. Author's summary.

TRACE ELEMENTS IN ANIMALS WITH TRICHINELLIASIS AND HYDATIDOSIS.

СОДЕРЖАНИЕ МИКРОЭЛЕМЕНТОВ У ЖИВОТНЫХ ПРИ ТРИХИНЕЛЛЕЗЕ И ЭХИНОКОККОЗЕ

B.E. Kurashvili, Akademiya Nauk Litovskoi SSR, Institut Zoologii i Parazit., USSR.

Changes in levels of 7 microelements (manganese, silicium, argentum, copper, aluminium, zinc and pumbum) were studied in animals in trichinellosis. The studies of microelement levels by method of emission spectral analysis and by neutronic activation, showed a double increase of manganese in Trichinella infected animals.

The changes in levels of 7 other microelements (copper, zinc, manganese, magnesium, calcium, ferum and cobalt) were studied in Echinococcus-infected animals.

The examinations with the use of neutronic activation method showed that

the levels of zinc, in the blood of Echinococcus - infected animals and in Echinococcus bladder liquid were also increased.

Vilnius, USSR; Akad. Nauk Litovskoi SSR, Inst. Zool. i Parazitologii, Materialy Dokladov k II-oI Vsesoyuznoi, Konferentsii po Probleme Trikhinelleza Cheloveka i Zhivotnykh (27-28 Maya 1976 G.). Part of collective document, pages 133-137, 1976.

2 tables. Author's summary.

In RUSS, summary in ENGL.

TRICHINELLOSIS IN A POLAR FOX WITH ALLERGIC SYNDROME.

АЛЛЕРГИЧЕСКИЙ СИНДРОМ ПРИ ТРИХИНЕЛЛЕЗЕ У ПЕСЦА

B.P. Vsevolodov, Alma-Ata Zoovet. Inst., Alma-Ata, USSR.

The collapse of a polar fox in the zoo following intensive chronic invasion of trichinella is described. Death was caused by heavy infection of the kidney, liver and other organs. The reaction of hypersensitivity of a retarded type developed into a prolonged sensibilization by helminths or products of their metabolism.

Tartu, USSR; Estonskaya, Sel'skokhozyaistvennaya Akademiya Materialy vi Vsesdyuznoi Konferentsii Po Patologicheskoi Anatomii Zhivotnykh. TOM II. Part of collective document, pages 236-240, 1977.

4 references, 3 figs. Author's summary.

In RUSS, summary in ENGL.

IMMUNOGENICITY (IN FUR BEARING ANIMALS) OF CANINE DISTEMPER LIVE VACCINE PREPARED FROM STRAIN "EPM" VIRUS.

ИЗУЧЕНИЕ ИММУНОГЕННЫХ СВОЙСТВ ВАКЦИНЫ ПРОТИВ ЧУМЫ ПЛОТОЯДНЫХ ИЗ ШТАММА ЭПМ

A.A. Sulimov, A.V. Selivanov, K.N. Gruzdev, O.A. Metelkin, V.O. Geller, All-Union Control Inst. for Vet. Preparations, Moscow, USSR.

A dose of 200 Tcid50 of the modified virus was safe and effective for arctic

foxes, mink and the ferret-polecat hybrid when given by intramuscular injection.

Trudy Vsesoyuznogo Gosudarstvennogo Nauchno-Kontrol'nogo Instituta Veterinarnykh Preparatov, 29/30, 61-64, 1980.

3 references, 2 tables. CAB-abstract.

In RUSS.

AEROSOL IMMUNIZATION OF MINK AGAINST DISTEMPER.

АЭРОЗОЛЬНАЯ ВАКЦИНАЦИЯ НОРОК ПРОТИВ ЧУМЫ ПЛОТОЯДНЫХ

K.N. Gruzdev, A.V. Selivanov, E.P. Danilov, O.A. Metelkin, V.O. Geller, A.A. Sulimov, All-Union Control Institute for Veterinary Preparations, Moscow, USSR.

Aerosols were prepared from the live, modified "EMP" strain of distemper virus suspended in Glycerol (5 percent) and dried, skimmed milk (5 percent). Mink 40-45 days were made to inhale an aerosol of 40-200 Tcid50 for virus each of 15 minutes. At the higher dosage, the subsequent titre of virus-neutralizing antibody was as high as that provided by intramuscular injection of a standard dose. Immunized mink withstood challenge with the virulent snyder-hill strain of virus 8 months after aerosol immunization.

Trudy Vsesoyuznogo Gosudarstvennogo Nauchno-Kontrol'nogo Instituta Veterinarnykh Preparatov, 29/30, 65-70, 1980.

7 references, 3 tables. CAB-abstract.

In RUSS.

EFFICACY OF SOME ACARICIDES AGAINST OTODECTIC MANGE IN FUR BEARING ANIMALS (SILVER-GREY FOXES AND ARCTIC FOXES, WITH SPECIAL REFERENCE TO CIODRIN-CROTOXYPHOS).

ЭФФЕКТИВНОСТЬ НЕКОТОРЫХ АКАРИЦИДОВ ПРИ ЛЕЧЕНИИ ОТОДЕКТОЗА ПУШНЫХ ЗВЕРЕЙ

A.N. Davletshin, B.A. Frolov, Moscow, USSR.

Otodectes cynotis was present in the ears of 8 percent of 591 silver-grey foxes, severe in 15 percent of cases, and complicated by bacterial infection

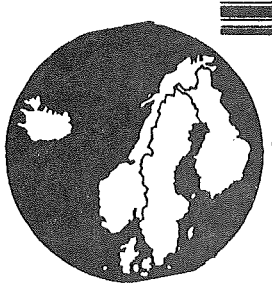
in 23 percent of cases. 1149 arctic foxes (Alopex lagopus) in the same 8 fur farms were also examined, but the results are not given. Twelve acaricides were tested against isolated mites, and six of the most promising ("vinylphosphate", "Heterofos", "Difos", "Pliktran", Ciodrin-Crotoxyphos and Chlorofos-Trichlorphon) were tested on infested foxes, with 100 percent cures in most cases. The authors recommended application to each ear of 2 ml of a 0.25 percent oily solution of crotoxyphos.

Moscow, USSR; Vsesoyuznyi Nauchno-Issledovatel'skii Institut Veterinarnoi Sanitarii. Novye Sredstva i Metody Bor'by Kleshchami i Gryzunami na Zhivotnovocheskikh Kompleksakh. Part of Collective document, pages 125-130, 1980. Trudy Vniivs; ISSN 0131-274x.

9 references, 2 tables. CAB-abstract.

In RUSS.

COMMUNICATION



SCIENTIFIC MEETING IN THE SCANDINAVIAN ASSOCIATION OF AGRICULTURE SCIENTISTS (NJF), DIVISION OF FUR ANIMAL PRODUCTION.

Malmoe, Sweden, October 3-5, 1983.

by Gunnar Jørgensen.

The annual scientific meeting was attended by 120 scientists, advisers and leading organization people. 24 reports dealing with many different aspects in the fur animal production were given.

Below we state the titles and the authors. Hopefully we soon should be able to bring reports or abstract of the reports in SCIENTIFUR. Up to that time you can obtain the reports by direct contact to the authors or by contacting Dr. Anne-Helene Tauson, Agricultural University of Sweden, Dept. of Animal Husbandry, Funbo-Lövsta, S-755 90 Uppsala, Sweden.

1. Results of the work with artificial insemination of foxes during the year. Jan Fougner (N), Per Henriksen (DK), and Maija Valtonen (SF).
2. Organization of the fox breeding by use of artificial insemination Einar Einarsson (N).
3. Selection based on index-breeding strategies. Lars Elofson (S), and Einar Einarsson (N).
4. Testosteron koncentration in blood from mink males with different fertility. Christer Sundqvist (SF) and Allti Lukkola (SF).
5. Testicular ferminisation in Finn Raccoon. Maija Valtonen (SF) and Adrian Smith (N).
6. Mating experiments with mink. Lars Elofsson (S).
7. Chromosome numbers and breeding results in blue foxes. Auli Mäkinen (SF).
8. Chediak-Higashi Syndrome in foxes. Norodd Nes (N).
9. Prostaglandin treatment of blue foxes with lengthened gestation period. Ordin Møller (N).

10. Use of winter nestboxes for foxes. H. Konnerup Madsen (DK) and Stig Moss (SF).

11. Experiment with different cages for foxes. Stig Moss (SF).

12. Use of behaviour studies in animal research. Bjarne O. Braastad (N).

13. Experiments with different protein levels in feed for mink. R. Sandø Lund (DK).

14. Experiments with low protein content in minkfeed. Hans Berg (SF).

15. Results of digestibility- and growth trials in mink fed different fish meal qualities as evaluated by biological- and chemical quality criterias. Gunnar Jørgensen (DK). (Abstracted in SCIENTIFUR vol. 7, no.2, p. 68).

16. Fishmeal as feed for foxes. Hans Rimeslåtten (N).

17. Use of lactic acid producing bacterias in mink feed during pregnancy and lactation. Anne-Helene Tauson (S).

18. Lactic acid fermented slaughterhouse offal as feed for mink and foxes. Anders Skrede (N).

19. Experiments with fish silage as feed for mink 1982. Georg Hillemann (DK).

20. Capelin (Mallotus villosus Müll) as feed for fur bearing animals. Liisa Tång (SF) and Jaakko Mäkelä (SF).

21. Acidified pressed fish. Tapio Juokslahti (SF).

22. Further progress in management at Northwood Fur Farms since Vedbaek, 1980. Tony Rietveld (USA). (Original report in this issue of SCIENTI= FUR.

23. Plasmacytosis, breeding results and farm economy in the four Nordic countries. Erik Smeds (SF) and Mogens Hansen (DK).

24. Medical treatment of fox scrapie. G. Berge (N).

THE DAY THAT A SCIENTIFIC MEETING IN FUR ANIMAL PRODUCTION IS NOT GOING TO BE HELD BEFORE ANNOUNCEMENT IN SCIENTIFUR and

THE DAY THAT AUTHORS OF REPORTS GIVEN BY SCIENTIFIC MEETINGS IN FUR ANIMAL PRODUCTION HAVE TO SEND ABSTRACTS TO SCIENTIFUR (in English) WITHIN ONE MONTH AFTER THE MEETING, THIS DAY WILL SCIENTIFUR SERVE YOU IN A BETTER WAY.

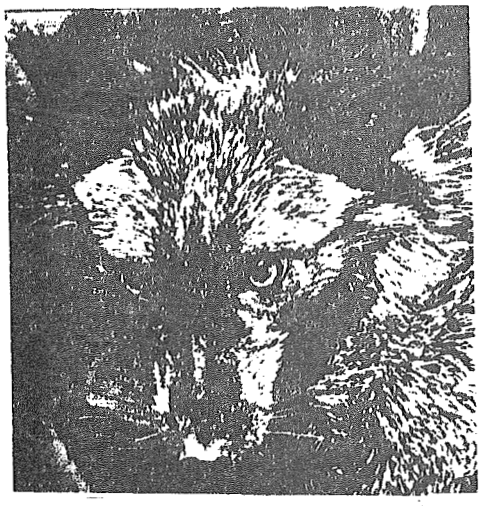
THIS DAY THE EDITORIAL STAFF WILL BE HAPPY!

HAPPY CHRISTMAS TO ALL OF YOU WHO REMEMBER THIS.

BOOK REVIEWS

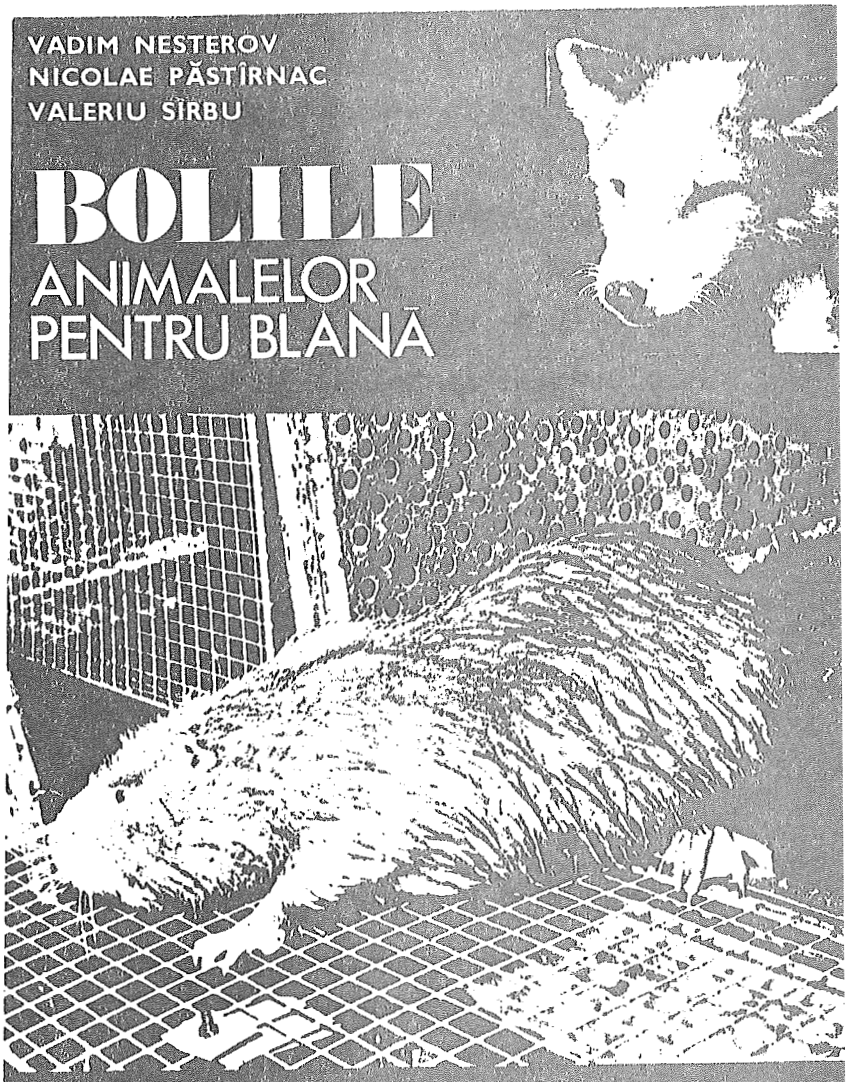
NESTEROV, V.; PASTIRNAC, N.; SIRBU, V.; EDITURA CERES, BUCURESTI (ROMANIA)

DISEASES OF THE FUR ANIMALS
[BOLILE ANIMALELOR PENTRU BLANA] (RO)
BUCAREST (ROMANIA), EDITURA CERES, 342 P. (1981)
MONOGRAPH
NUMERICAL DATA
NOTES : 120 ILL. , 15 TABLES , 22 REF.



VADIM NESTEROV
NICOLAE PĂSTÎRNAC • VALERIU SÎRBU

BOLILE ANIMALELOR PENTRU BLANĂ



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Bucureşti — 1981

VINTILA, I.; EDITURA CERES, BUCURESTI (ROMANIA)

GENETIC MUTATIONS WHICH DETERMINE THE COLOUR IN FUR ANIMALS
[MUTATIILE GENETICE CARE DETERMINA CULOAREA LA ANIMALELE DE BLANA] (RO)
BUCAREST (ROMANIA), EDITURA CERES, 216 P. (1981)
MONOGRAPH
NUMERICAL DATA
NOTES : 65 ILL. , 24 TABLES , 45 REF.

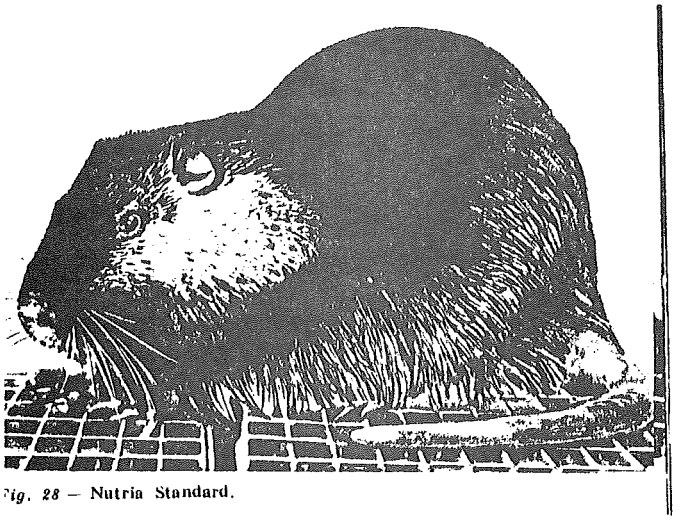

Fig. 28 — Nutria Standard.

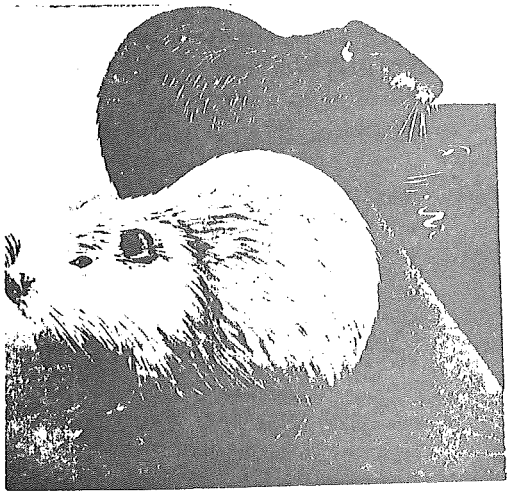

Fig. 42 — Nutria Aurie (Chihlimbar) și nutria Albă.

Prof. dr. ing. **Ioan Vintilă**
Facultatea de zootehnie și medicină veterinară
Timișoara

MUTATII GENICE care determină culoarea la animalele de blană și pielicele

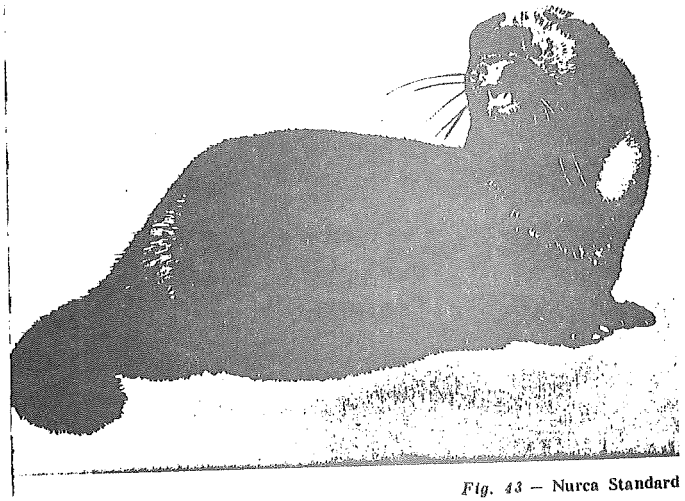

Fig. 43 — Nurca Standard

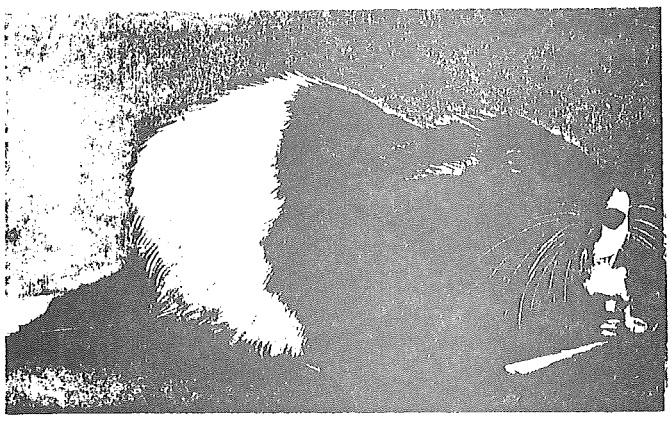

Fig. 35 — Nutria Bălțată

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LETTERS TO THE EDITOR

MICHIGAN STATE UNIVERSITY

DEPARTMENT OF ANIMAL SCIENCE
ANTHONY HALL

EAST LANSING · MICHIGAN · 48824

September 22, 1983

Dr. Gunnar Jorgensen
NJF's Fur Animal Division
Scientifur
48 H Roskildevej
DK-3400 Hilleroed, Denmark

Dear Gunnar

I recently received Vol. 7, #3 of Scientifur which reminded me to send you the enclosed abstracts and citations of some recent fur animal publications by members of our group for consideration for publication in Scientifur.

As you can see from our recent publications, our studies with fur-bearers here in Michigan are mainly in the area of toxicology. Fortunately for us, but unfortunately for the mink farmers, the mink is a very sensitive species to many environmental contaminants and has become a desired species for conducting toxicology research here in the US.

We should be sending you several more reprints in the near future.

Sincerely

Richard J. Aulerich
Professor

RJA/cmd

Enclosure

Thank you very much and the best wishes for a Merry Christmas and a happy New Year.

MINK'S COMMENTS ON THE ANTI-FUR COMPAIGN

Apparently the anti-fur groups take themselves seriously. Some of them even believe that they can look within the mink's mind and determine how he feels about his environment. I personally became so serious about the subject that I decided to interview a mink to get his thoughts. After several attempts and many bitten fingers, the following was his reply.

Lately I hear
about me poor little mink
and how some groups will end my misery.
Now that makes me sad
'cause this life's not bad
and I don't want to be wild and free.

It's really a pity
that those folks from the city
just can't leave me as should be.
Why, my forest cousins
got problems by the dozens
while I've got a rancher to care for me.

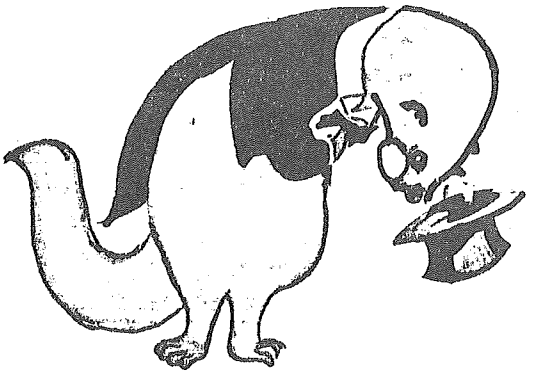
I've plenty good feed,
more than I need,
and the water is always fresh.
Got a medicine man
and a private health plan,
and no varmints to nip at my flesh.

Yes, I've got it made.
In the summer there's shade
and there's nest when the winter's cold.
No matter the season,
my wants he keeps pleasing.
I'll be pampered till the day I'm sold.

But on a Saturday night
somewhere lights burn bright
and occasionally I'll shed a tear of joy,
'cause the biggest entertainment I've got
is to think of the day
I'll fur out on a magnificent lady!

Unfortunately, we cannot reveal the identity of the mink, because he/she has sent the comment anomymous.

The Editor.



MR. MINK SAYS "THANK YOU"